

SOUTHEASTERN BIOLOGY



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ASB

ASB 65TH ANNUAL MEETING

ASB

APRIL 14-17, 2004

ASB

University of Memphis, Rhodes College
& Christian Brothers University
Memphis, Tennessee

ASB

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See Page 301 and Consult Website
<http://www.memphis.edu/asb>

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University of Memphis, Student Plaza showing clock tower.

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PURPOSE

The purpose of this association shall be to promote the advancement of biology as a science by encouraging research, the imparting of knowledge, the application of knowledge to the solution of biological problems, and the preservation of biological resources. The ASB has representation in Section G Committee of the AAAS. Varying types of membership are available to individuals and institutions. See inside back cover.

Time and Place of Future Meetings

2004 April 14-17 Co-hosted by Univ. of Memphis, Rhodes College, and Christian Brothers Univ., Memphis, Tenn.
2005 April 13-16 Hosted by the University of North Alabama, Florence, Alabama.
2006 April 5-8 Hosted by the University of Tennessee, Knoxville, Tennessee.
2007 April Hosted by the University of South Carolina, Columbia, South Carolina.

65TH ANNUAL MEETING AT-A-GLANCE

The University of Memphis, Christian Brothers University and Rhodes College welcome the Association of Southeastern Biologists to Memphis for their 65th Annual Meeting, April 14-17, 2004. The local arrangements committee, co-chaired by Scott Franklin and Mel Beck, consists of faculty in the Biology departments of all three institutions. A website has been established at <http://www.memphis.edu/asb>. Please visit the site for more detailed information and on-line registration information.

Highlights of the meeting include a 6:30 pm plenary address by Daniel S. Simberloff on Wednesday, April 14, followed by a reception, several symposia, and a variety of contributed paper and poster sessions. Half-day field trips include a canoe trip on the Wolf River, a boat trip on the Mississippi River, birding on a Mississippi River floodplain (great time for migrants), and a visit to the Memphis Zoo to discuss their conservation initiatives.

The meeting will be held on the University of Memphis campus (located about the center of Memphis) at the Fogelman Executive Center and Holiday Inn. Various activities will be in both buildings and you must go outside to venture between. Participants may stay at either of these possibilities (\$95 for suites and \$85 for rooms), or one of two other lodging arrangements: Park Vista (\$89 [single or double], \$99 [triple], \$109 [quad]) or Holiday Inn Select (\$86). Participants are expected to contact the hotels directly for housing. A complimentary shuttle service will be provided for those staying off-site of the meetings.

Memphis provides many activities for scientists and their families, including panda bears at the Memphis Zoo and excellent Bar-B-Q (Memphis style dry rub ribs). Beale Street provides excellent entertainment day and night. We hope that you enjoy your time in Memphis.

Directions: The meetings will be held at the Fogelman Executive Center and Holiday Inn, which are directly across Central Avenue from one another on the University of Memphis campus. Website (<http://www.people.memphis.edu/~operations/campusframes.htmlx>).

Driving directions are found at the following School of Business website (http://fcbe.memphis.edu/modules/general/St_pros_mapdir.php?).

Climate: Weather in April is notoriously unpredictable, so layers may be best. Temperatures will likely be in the high 80s during the day and perhaps a bit cooler at night. Rain is always possible and, rain or no rain, humidity may be high.

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Alan Jaslow (Rhodes)

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(CBU)

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Transportation/Parking/ Tourism:

Alan Jaslow
Malinda Fitzgerald

AFFILIATE SOCIETIES MEETING WITH ASB IN APRIL 2004

HOSTS: UNIVERSITY OF MEMPHIS, CHRISTIAN BROTHER'S UNIVERSITY, RHODES COLLEGE

The following affiliate societies will be in attendance at the 2004 Annual Meeting. We anticipate an excellent diversity of paper and poster presentations. The societies and their contacts are listed below.

American Society of Ichthyologists and Herpetologists, Southeastern Division

Dr. Martin O'Connell
Pontchartrain Institute for
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Beta Beta Beta of Southeastern District I

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Botanical Society of America Southeastern Division

Dr. Lytton John Musselman
Mary Payne Hogan
Professor of Botany & Chair
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Old Dominion University
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lmusselm@odu.edu

Ecological Society of America Southeastern Chapter

Dr. Paul Schmalzer, Chair
Ecological Program, Mail Code Dyn-2
Dynamac Corporation
Kennedy Space Center, FL 32899
paul.schmalzer-1@ksc.nasa.gov

Southeastern Society Parasitologists

Dr. Charles T. Faulkner, President elect
Clinical Parasitology Service, Rm. A-233
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Veterinary Teaching Hospital
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Southeastern Fishes Council

Dr. Henry Bart
Tulane Museum of Natural History
Belle Chasse, LA 70037
hank@museum.tulane.edu

Southern Appalachian Botanical Society

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100 East University
Magnolia, AR, 71753-5000
jewinstead@saumag.edu

Society of Wetland Scientists South Atlantic Chapter

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St. Johns River Water Mgmt. Dist.
P. O. Box 1429
Palatka, FL 32178
(386) 329-4387; FAX (386) 329-4329
sjmiller@sjrwmd.com

Please copy the symposia announcement on the next page and post it in your department. Note that there are symposia of interests to microbiologists, ethologists, those interested in invasive plants and those with interests in women in science. Encourage those in your department in those disciplines to come to our meeting. Make as many copies as you need. If possible, please enlarge copies for posting. Thanks for your help and cooperation.

**Symposia at the Annual Meeting of
The Association of
Southeastern Biologists**

April 14-17, 2004

Memphis, Tennessee

Social Behavior in Animals

**Microbiology Practitioners and
Educators**

**Invasive Plant Awareness and
Research: The Priority Status**

Women in Science

**Find more details and registration
information at**

<http://www.asb.appstate.edu/>

**AWARDS FROM THE AMERICAN SOCIETY OF
ICHTHYOLOGISTS AND HERPETOLOGISTS**

2003 AWARDEES

Robert H. Gibbs, Jr., Memorial Award

Presented for excellence in systematic ichthyology. In July 2003 at the ASIH annual meeting in Manaus, Amazonas, Brazil, the award for 2003 was presented to **Dr. G. David Johnson**, Division of Fishes, National Museum of Natural History, Smithsonian Institution, Washington, D.C., for his numerous contributions clarifying the relationships of bony fishes.

Henry S. Fitch Award

Presented for excellence in herpetology. In July 2003 at the ASIH annual meeting in Manaus, Amazonas, Brazil, the award for 2003 was made to **Dr. Richard Shine**, for his outstanding and groundbreaking research on the biology of squamate reptiles, especially snakes through studies that emphasize field analyses of behavior and ecology and experimentally test original hypotheses on evolutionary processes, reproductive biology and sexual selection within a phylogenetic context.

Raney Fund Awards

Awards of \$1,000 were made to each of the following young ichthyologists in 2003:

W. James Cooper	Jennifer L. Fessler	Andrew Whiteley
Wasila M. Dahdul	Jonathan Lee	

Gaige Fund Awards

Awards of \$500 were made to each of the following young herpetologists in 2003:

Diana L. Andres	Andrew Giordano	Geoffrey Sorrell
Matt Brandley	Alison McCombe	Jennifer Weist
Ammon Carl	Mason Ryan	Steven Whitfield
Alison Davis		

Stoye Awards

Awards for best oral presentations were made to each of the following students in 2003:

O. Q. Carnaval (HERP)	James C. Liao (ICH)
Ana Carolina (HERP)	Elizabeth F. Neely (GD&M)
Karen P. Frutchey (P&PE)	Michael P. Robinson (E&E)
Tony Gamble (CONSERV)	

Storer Awards

Awards for best poster presentations were made to each of the following students in 2003.

Brian L. Sidlauskas (Ichthyology)

Luis Schiesari (Herpetology)



NEW WEB EDITOR, NEWS EDITOR, AND BOOK REVIEW EDITOR

Howard Neufeld has “retired” as Web Editor, Jon Fortman has “retired” as News Editor, and James Ross has “retired” as Book Review Editor. President Andrew Ash has appointed Terry Richardson as the new Web Editor, Leon Jernigan as the new News Editor, and Debbie Moore as the new Book Review Editor.

For items to be placed on the ASB website, contact Terry. His address, telephone number, and e-mail address appear on the inside front cover.

Leon would appreciate receiving news items about you, your institution, and your colleagues and students. His address, telephone number, and e-mail address appear on the inside front cover. Deadlines to send him news are October 28 for the January issue, January 13 for the April issue, and July 13 for the September issue. The December issue does not contain news of biology in the Southeast.

If you are interested in reviewing new books in the biological sciences, let Debbie know your specialty in biology so that you can review appropriate books. Her address, telephone number, and e-mail address also appear on the inside front cover.



University of Memphis, ecology students seining
for koi at Memphis Botanical Garden.

ASSOCIATION OF SOUTHEASTERN BIOLOGISTS

EXECUTIVE COMMITTEE MEETING WEDNESDAY, 9 APRIL 2003 CRYSTAL CITY HYATT REGENCY HOTEL ARLINGTON, VIRGINIA

ATTENDANCE: 17 individuals attended the meeting.

NAME	CAPACITY	E-MAIL ADDRESS
Ken Shull	President	shulljk@appstate.edu
Andrew Ash	President-Elect	aash@nat.uncp.edu
Terry Richardson	Secretary	trichard@unanov.una.edu
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Kim Marie Tolson	Executive Committee Member at Large	bitolson@ulm.edu
Rebecca Cook	Executive Committee Member at Large	cook-reb@lambuth.edu
Michael Dennis	Executive Committee Member at Large	Mike@bda-inc.com
Jim Caponetti	Editor	jcaponet@utk.edu
John Herr	Archivist	herr@boil.sc.edu
Donald Roush	Tri-Beta Representative	droush@unanov.una.edu
Joerg Lotze	Editor Southeastern Naturalist	humboldt@loa.com
Geraldine Twitty	Local Arrangements 2003/AIBS	gtwitty@howard.edu
Lafayette Frederick	Local Arrangements 2003	lfrederick@howard.edu
Claudia Jolls	Vice President	jollsc@mail.ecu.edu
Virginia Martin	Tri-Beta Representative	martinv@queens.edu
Tom Wentworth	Executive Committee Member at Large	tom_wentworth@ncsu.edu
Jim Ross	Book Review Editor	jross@cc.cumber.edu

President J. Kenneth Shull called the meeting to order at 3:07 PM:

President's Opening Remarks—Ken asked if there were any additions or corrections to the distributed minutes. Hearing none, Ken declared the minutes of the September 14th EC meeting approved as read.

OFFICER AND REPORTS

President's Report—Ken Shull provided a written report. Ken extended his thanks to all executive committee members and committee chairs for serving. Ken indicated he had intended to increase the amounts of awards, but did not

feel it was the best time to ask sponsors because of the current economic conditions. He still thinks this should be done when timing is better. Ken wants us to work on broadening the membership base to include underrepresented disciplines and also to include the larger research-one institutions. Ken mentioned he had received several complaints about the rising cost of the annual meeting. He mentioned the need to seriously consider what can be done about the rising costs finding places that are less expensive. Ken also mentioned that Association business conducted via e-mail is working out fine and helps resolve some issues prior to EC meetings. He contends, however, that voting needs to be done face-to-face. He mentioned we did not have much e-mail business this past year. He feels that conducting such e-business should continue.

Past President's Report—No report was presented. Robert Haynes was unable to attend due to family illness.

President-Elect's Report—Andy Ash presented a written report. He mentioned that the originally invited plenary speaker had cancelled at the last minute due to family illness. Andy was able to get Dr. Wayne Owens at the last minute. Andy mentioned he would send a biography to Jim Caponetti for the September issue. He indicated he had made all of the committee assignments he could make before elections and intends to have a full list of committee assignments within about 10 days. Andy mentioned membership advertising was going well

Vice-President's Report—Claudia Jolls presented a written report. She indicated nothing substantive had taken place and had nothing new to report.

Secretary's Report—Terry Richardson presented a written report. He mentioned all minutes had been compiled and sent out for review. All minutes were currently approved and the 63rd Annual Business Meeting minutes had been published in the September issue for the membership's perusal and will be voted on Friday. Terry mentioned the ASB Constitution and Bylaws and ASB Officers Handbook had been updated in December 2002 and updated versions had been sent to the Web Editor. Terry sent reminders to all EC members and committee chairs to bring two copies of written annual reports and printed out certificates of appreciation for local arrangements committee members, outgoing officers and committee chairs. He indicated that elections ballots had been prepared and all necessary materials for the archives had been gathered. Terry updated AAAS officer information for 2002.

Treasurer's Report—Tim Atkinson presented written reports for FY 2002 financial status, current financial status of the 2003 FY, and a proposed FY 2004 budget. Tim went over the statements with the EC. He mentioned we had a net decrease of \$2,330.00 due mainly to paying for the number 4 issue in January of this year. Tim indicates that overall we are doing well financially. He also pointed out that bulletin expenses had decreased overall. There were some general discussions and questions.

Motion 1: Mike Dennis moved the 2004 proposed budget as presented be approved. Andy Ash seconded. The motion carried.

Tim mentioned that the Enrichment Fund was doing well especially given the current economy.

Motion 2: Mike Dennis moved the Enrichment Fund report be approved. Rebecca Cook seconded. The motion was approved.

Membership Officer's Report—Debbie Atkinson sent a written report via Tim Atkinson and Tim spoke on Debbie's behalf. Tim mentioned membership was increasing. He pointed out one deceased member had been reported over the past year, namely Dekalb Russell. Terry asked the EC if there were any other deceased members known. None were given. Tim indicated we have 1,195 members at present not including those joining at this year's annual meeting. There was some discussion.

Print Editor's Report—Jim Caponetti presented a written report. Jim pointed out that the membership year change had been printed in the Bulletin and the Bulletin price was raised from \$5 to \$7 per issue. Award announcement changes were incorporated in this year's announcements. Jim pointed out that this year's ASB Interim Meeting of the Executive Committee will be in Knoxville on September 13th at the Hilton Inn at the Knoxville Airport. Andy indicated the meeting would start at 9:00 AM.

Web Editor's Report—Howard Neufeld provided a written report and Ken spoke on Howard's behalf. Ken mentioned Sandy Windlespecht will no longer be maintaining our web site. Ken indicated we are looking for someone to take her place and if anyone has any suggestions to please let him know. Dwayne Wise was mentioned as a possibility. Terry said he would talk to their IT manager to see if he might be interested in taking over the task.

ACTION 1: Terry will talk to the IT manager at UNA to see if he might be interested in taking over the task of maintaining the ASB web page.

Archivist's Report—John Herr presented a written report. John said there were some small changes in the archive categories, but no changes on how the current system actually works. John visited the archives at the University of Georgia and said they are in good order and that Steve Brown is the contact there.

COMMITTEE REPORTS

Enrichment Fund Board—Kim Marie Tolson presented a written report. She indicated there was not much to add to Tim's statement of finances. She said the Outstanding Biology Teacher from Virginia was Mrs. Dembry Banbury and Kim said she would be there tonight at the plenary session.

Graduate Student Support Award Committee—No report was given. Tim said the awards had been made.

Local Arrangements, 2003 Arlington, VA.—Co-chair Lafayette Frederick spoke for the committee. Lafayette indicated that through preregistration today, there were 160 regular members, 216 students, 47 nonmembers and 21 exhibitors registered for a total of 445 registrants. Lafayette said there were 2-3 requests for refunds after the deadline. He inquired as to whether or not it was acceptable to have a “single day” registration fee? He said that they had decided a single-day fee of \$100. It was discussed whether one-day registration should be incorporated into the overall registration scheme.

ACTION 2: Ken suggested Andy take up the issue of one-day registration and meeting security at the September meeting.

Lafayette said there were 200 paid for the Thursday night social, 130 paid for the banquet, and 14 for the Past President’s breakfast. He said all but three field trips had been cancelled, but there were 12 signed up for the arboretum trip, 55 for the Tri-Beta field trip, and 9 for the national gardens trip. Lafayette indicated layout maps of the Hyatt would be available at the registration desk as would be a summary program of changes. He also pointed out that additional tickets for the upcoming social and banquet would be available at the registration desk. And that the evening’s social would be moved to the exhibit hall.

Break—4:20 PM

Reconvene—4:33 PM.

Meritorious Teaching Award Committee—Tom Wentworth was standing in for Diane Nelson. A written report was provided. Tom indicated there were no new nominations, but three nominations remained. However, two of those nominations had “timed-out” and were, as a result, no longer eligible leaving only one. He indicated the committee felt this remaining nominee, however, was a strong candidate and would be given the award.

Nominations Committee—No report. The slate of officer nominees was published in the Bulletin. Ken asked the EC to approve the slate as published. The slate was approved.

Place of Meeting Committee—Kim Marie Tolson provide a written report. Kim indicated a consortium of sorts from representative schools in Alabama was formed to examine the idea of hosting the annual meeting somewhere in Alabama. The ideas of asking the University of Georgia to host the annual meeting and SREL to host were discussed. It was mentioned that Don Shure and Eloise Carter might be good contacts also for hosting meetings.

Publications Committee—Rebecca Cook presented a written report. The request for paid advertising in the Bulletin came up this past year and Rebecca indicated the committee needs rates for paid advertisements. Ken mentioned there were tax problems associated with this and that we could not charge for advertisement, but could give advertisements to patron members. Joerg Lotze indicated that advertisements inserts at \$0.03 per page could be arranged with

Allen Press without tax issues arising. It was generally agreed that the patron membership of \$750.00 which includes a free, one-page advertisement, is the mechanism by which we should allow advertising.

AFFILIATE REPORTS

Beta Beta Beta—Don Roush and Virginia Martin were present and gave an oral report. They mentioned they were adding many new chapters. They both mentioned concern over the cost of this years meeting and the fact that undergraduate members of Tri-Beta were required to join ASB. There was discussion regarding the nonmember registration fee allowing for membership.

AIBS—Geraldine Twitty presented a written report, but no oral report was given.

Book Review Editor—Jim Ross asked to be recognized. He indicated no plaque information had been sent to him for award recognition. He said this might have been due to e-mail problems he had at his home institution. Jim mentioned that next year would be his 20th year doing plaques and would be his last, and that we should be considering someone else for this task.

Editor of the *Southeastern Naturalist*—Joerg Lotze gave an oral report. He said the journal continues to do well and is meeting publication deadlines. He said the manuscript flow is three times that of the *Northeastern Naturalist*. Joerg said subscriptions were at about 725 subscribers and growing. He said they were still trying to convince colleges and universities to take out institutional subscriptions. Joerg pointed out that they were at about 20% of what they would like in terms of these institutional subscriptions.

OLD BUSINESS

Item 1—Ken Shull brought up the previously introduced amendment to the ASB Bylaws presented by the Executive Committee. The amendment was to change Article VII, Section 1, from

“H. The Meritorious Teaching Award Committee may each year select **a member of the Association to receive the award for meritorious teaching at the college level.** [emphasis added] The committee shall consist of three members appointed for terms of 3 years, with a member appointed annually and serving as Chair in the third year.”

to read

“H. The Meritorious Teaching Award Committee may each year select **for the award a member of the Association who has taught biology for at least ten years in any college or university represented in the Association.** [emphasis added] The committee shall consist of three members appointed for terms of 3 years, with a member appointed annually and serving as Chair in the third year.”

Ken opened the floor for discussion and hearing none asked the amendment be approved. The amendment was approved unanimously.

Item 2—Ken revisited the idea of having a Senior Poster Award. He indicated there was no sponsor for the award and wondered if perhaps we should sponsor the award. Some discussion ensued and the general consensus was that the current Senior Research Award was not restricted to an oral presentation at the meeting and that a poster presentation was acceptable.

Action 3: The Senior Research Award announcement needs to state that either oral or poster presentations are acceptable.

Item 3—Ken mentioned he thought the ASB research award levels should be raised from the current \$600 to closer to \$1000. He said he did not ask the sponsors to increase these awards due to the current economic conditions. He wondered if ASB should support the increase and suggested we do so. Mike suggested we consider this at the September meeting.

Action 4: Address raising the ASB student and senior research awards at the September interim meeting.

NEW BUSINESS

Item 1—Ken indicated we will need a new web editor. Terry reiterated he would talk to John McGee, IT coordinator and UNA.

Item 2—Ken presented the need to prepare for a run-off situation for Friday's election for the office of President. It was decided to do the election immediately, have tellers count the ballots for President, and return to the business meeting announcing a run-off if necessary. Ken suggested that run-off procedures be addressed at the September meeting.

Action 5: Address run-off procedures at the September meeting.

Item 3—Ken addressed the issue of getting new awards for underrepresented sub disciplines. He pointed out (a) Physiology; (b) Cell Biology, Genetics, Development; and (c) Microbiology, Phycology, Mycology, and Protozoology as areas that need better attendance and participation at our meetings. Ken suggested ASB sponsor three awards in the three previously indicated sub disciplines for three years at the amount of \$400.00-500.00 and advertise these awards to see if it encourages increased participation in those areas.

He also suggested seeking sponsors during this trial period. After some discussion it was decided that the next administration should address this issue. Mike suggested Ken come with a motion at the September meeting addressing this issue and a program to get the word out and encourage participation.

Action 6: Address establishment of new awards to attract underrepresented sub-disciplines at September meeting.

Adjournment—6:06 PM.

Respectfully Submitted

Terry D. Richardson, Secretary



Rhodes College students collecting Asian clams.

ASSOCIATION OF SOUTHEASTERN BIOLOGISTS
EXECUTIVE COMMITTEE MEETING
SATURDAY, 12 APRIL 2003
CRYSTAL CITY HYATT REGENCY HOTEL
ARLINGTON, VIRGINIA

ATTENDANCE: 17 individuals attended the meeting.

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Andrew Ash	President	aash@nat.uncp.edu
Terry Richardson	Secretary	trichard@unanov.una.edu
Tim Atkinson	Treasurer	tim.atkinson@carolina.com
Kim Marie Tolson	Vice President	bitolson@ulm.edu
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Jim Caponetti	Editor	jcaponet@utk.edu
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Lafayette Frederick	Local Arrangements 2003	lfrederick@howard.edu
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Claudia Jolls	President-Elect	jollsc@mail.ecu.edu
Virginia Martin	Tri-Beta Representative	martinv@queens.edu
Tom Wentworth	Executive Committee Member at Large	tom_wentworth@ncsu.edu
Debbie Moore	Executive Committee Member at Large	dmoore@tsud.edu
Zack Murrell	Executive Committee Member at Large	murrellze@appstate.edu

President Andrew Ash called the meeting to order at 8:07 AM:

President’s Opening Remarks—Andy opened the meeting by stressing executive committee meeting attendance. He pointed out that committee chairs need to attend the meetings even though technically they are not members of the executive committee. Their attendance is important as it gives a broader consensus and input from the Association. Andy next asked for introductions.

OFFICER AND REPORTS

Local Arrangements Committee, 2003—Lafayette Frederick gave a summary report of meeting statistics available at the time. He indicated our totals for paid registrants were 187 regular members, 298 students, 57 nonmembers, 12 one-

day registrants for a total of 554 paid registrants. Lafayette said the meeting receipts were not yet in and total costs had not yet been tallied so these data were not available. He pointed out some problems that were encountered, specifically many members did not follow the abstract format clearly, some requested refunds well after the published deadline, and there were some problems with too many audiovisual formats which added considerable expense. He suggested that perhaps in the future the transition be made to PowerPoint and ask members if they need 2x2 slide projectors to bring their own. It was suggested that overhead projectors be kept on hand as a back up. It was also brought up that "technicians" for changing bulbs, trouble-shooting, *etc.* be available. Dr. Elaine Davis pointed out the lack of Patron recognition on booth signage was simply an oversight. She also encouraged that for future meetings we should try to use sites where costs can be held down and she suggested areas with university-based convention centers. She also pointed out that the abstract deadline was not adhered to by many and that there were many that did not show to present their posters. Several ideas were discussed concerning how to help guarantee those submitting abstracts actually be present. Again, the idea of converting to PowerPoint as the "standard" presentation format was discussed. Discussion included that this would not be a problem as long as presentations were presented well in advance of the meeting so local arrangements could check compatibility. Also mentioned was that we should have a technician in each room and ask that presentations for each session be submitted to the AV tech of that session one hour prior to the start of that session. Ken Shull pointed out that at Appalachian State they requested submission of presentations one month in advance and then downloaded the presentations onto the meeting room computers. Jim Caponetti thanked various members of the Local Arrangements Committee for getting various materials in for publications. There was general agreement that meeting presentations should move to PowerPoint format.

Action Item 1: Andy appointed an ad hoc committee consisting of Ken Shull, Zack Murrell, Don Roush, and Scott Franklin to examine moving to all-PowerPoint format presentations at our annual meetings. Charge is to look at backup sources, program to be used, timeline for submission, *etc.* and present a proposal for approval at the September meeting.

President's Report—Andy asked Jim Caponetti to tell about the interim meeting. Jim announced that the September interim EC meeting would be held at the Knoxville Airport Hilton Inn in Alcoa, Tennessee. The meeting is scheduled for September 13 at 9:00 AM. Jim mentioned there was a group rate available at the Hilton, but reservations need to be made by August 12th.

Action Item 2: Terry should send an invitation for the September interim EC meeting to all committee chairs and officers.

Andy mentioned he wanted to address the issue of patrons and exhibitors and appointed an ad hoc committee of Kim Marie Tolson, Tim Atkinson and Mike Dennis to look into how we deal with both patrons and exhibitors. Andy noted that we had a number of unhappy exhibitors and patrons at this meeting.

Action Item 3: Andy appointed an ad hoc committee to examine how we deal with patron members and exhibitors. The committee members are Kim Marie Tolson, Mike Dennis and Tim Atkinson.

Andy mentioned that he and Tim had discussed having our annual meeting handled by professionals. These folks handle reservations, AV equipment, patrons, exhibitors, formatting space, registration, *etc.* Andy indicated Tim knew of an ASB member who does this and is willing to do it for us for \$10,000.00 per year no matter where the meeting is held. This should make local arrangements a lot easier and Andy thought it might make a big difference in whether members are willing to take on the task of hosting the meeting. This person could also save money on the meetings by negotiating with hotels for space, and bring in more money by getting more exhibitors so that the realized cost to ASB would only be around \$4-6,000.00 instead of \$10,000.00. Andy then opened the floor for discussion.

Action Item 4: The ad hoc committee for dealing with patrons and exhibitors will present a proposal at the September Interim meeting on using a professional meeting service. Tim will get the person he knows to give the EC a presentation at the interim meeting.

Action Item 5: Terry needs to send Mike his original copy of the April 2000 Patrons and Exhibitors Committee report.

Andy also wants Terry to look at the Handbook and update it where necessary as well as the Constitution and Bylaws. Andy pointed out that committee function has dwindled over the past year and he feels it is due, in part, to a lack of a good description of exactly what each committee should do and when it should be done. He also pointed out the lack of institution memory because many committees are no longer keeping portfolios of activities and passing them from chair to chair. He wants to reinstitute keeping a portfolio and passing it along.

Action Item 6: Andy asked Terry to look at the Handbook and update it where necessary. He also asked Terry to update the Constitution and Bylaws as necessary.

Andy wants each committee to have written timeline stating what that committee does and when it is to be done. For example, if the committee produces a "product" like a plaque, when do you need to get the plaque done, *etc.*

Action Item 7: Committee chairs are to develop a portfolio that initially contains a description of what the committee does from the Handbook along with any activities done on an annual basis and include a timeline and any relevant products, and pass this along to the next incoming chair.

Andy also mentioned he wanted to get these timelines, *etc.*, for each committee into the handbook.

Action Item 8: Terry will try to incorporate relevant portions of the committee chairs' portfolios into the Handbook revision.

Andy brought up place of meeting and stated we need to try to get at least three invitations this year to stay ahead. Ken brought up the point that several of our recent meetings have been more on the edge of the Association's range and that we need to try to get back to the core of our region. Kim Marie pointed out that we are getting all the meetings we can and that we simply are not getting volunteers from the schools in the core of our region.

Past President's Report—Ken Shull gave a report. Ken indicated he had spoken to Martin Microscope and they had consented to raising the Student Research Award from \$600.00 to \$1,000.00.

President-Elect's Report—Claudia Jolls reported. She indicated she would be working on committee assignments for next year and that she wanted to work more on membership. She pointed out that many exhibitors need at least one year advance notice for budgeting meeting expenses and we need to try approaching these exhibitors earlier than we currently do.

Secretary's Report—Terry Richardson gave the report. Terry reiterated he would be updating the Handbook while arranging the 2005 annual meeting. He said he would contact committee chairs and new officers and send a copy of relevant materials from the Handbook and send them the Constitution and Bylaws.

Action Item 9: Terry needs to send a copy of relevant materials from the Handbook and send the Constitution and Bylaws to all committee chairs and new officers.

Print Editor—Jim Caponetti stated that if any EC members had an announcement needing to appear in the September issue of the Bulletin to send it to him before school was out for the summer.

Web Editor's Report—Andy mentioned Sandy Windspecht will no longer be maintaining our web site and that we are looking for someone to take her place. Ken pointed out that Howard Neufeld may not wish to continue after his current term is up. Terry said he would talk to their IT manager to see if he might be interested in taking over the task of maintaining our web site.

Action Item 10: Terry will talk to John McGee, the IT manager at UNA, to see if he might be interested in taking over the task of maintaining the ASB web page.

Local Arrangements Committee, 2004, Memphis—Scott Franklin gave a report. The 2004 meeting will be April 14-17th at the Fogelman Center Holiday Inn, phone 901-678-3700. He said the larger sessions, banquet, *etc.*, would be in the Holiday Inn while all smaller sessions will be held across the street at the convention center. They intend to hold the poster sessions from 8-9:00 AM each morning in the exhibit hall with oral paper presentations beginning at 9:00 AM. Coffee breaks will be held at both the Fogelman Center and convention center. Some discussion ensued. Scott said a block of rooms had been set aside for the EC at the Fogelman Center and he indicated that we need to sell out all 135 rooms at the Fogelman Center. Additional arrangements have been made with Adam's Mark about seven miles away for \$89/double, \$99/triple, and \$109/quadruple and will have a continuous shuttle service running from Adam's Mark. Kim Marie asked about parking and Scott said he would look into it. Scott asked Tim if he could get a statement of our tax exempt status and Tim said he would send it.

Action Item 11: Tim will send Scott tax exempt information.

There was some general discussion that followed. Thursday night social options were discussed. One option being considered was the Beale Street Guitar Factory and another was the Memphis Zoo which would be opened to us for free. Scott mentioned a concern for weather. Discussion ensued. Ken pointed out that the Patrons need to be contacted about loss of booth space as a perk.

Action Item 12: Andy will send letter to patrons regarding loss of booth space.

It was mentioned that TVA had dropped as a Patron. Mike said he would make contact with TVA regarding their lapse in Patron membership and get back in touch with Tim and Jim.

Action Item 13: Mike will contact TVA regarding their status as Patron members of ASB.

The discussion continued centering on exhibitors. Ken mentioned he had been making a list of small items that frequently get overlooked when setting up meetings and said he would send this to Scott. Terry asked if Ken would also send him a copy.

Action Item 14: Ken will send Scott and Terry a copy of his list of items of concern when setting up a meeting.

Break: 10:04 AM

Return: 10:15 AM

After the break, general discussion on local arrangements for 2004 continued.

Local Arrangements, 2005, Florence, AL—Terry provided a brief summary of what he intends to do if the meeting is held in Florence in 2005. The meeting (paper and poster sessions, plenary session, exhibits, *etc.*) will be held at the Florence Conference Center and Holiday Inn in Sheffield, AL, will serve as the host hotel with 203 rooms. Webster Inn is also available with 62 rooms, and 4-5 miles from the Conference Center is Jameson Inn with about 63 rooms and Hampton Inn with 90 rooms. Terry will try to get Dreamland BBQ for the Thursday night social which is next to the Holiday Inn. Have a band, the Decoys, in mind that plays good dance music with a wide variety of styles and appeals to a large range of tastes. Ideas for field trips include going to Sipsey Wilderness with ravine habitats and relic populations, Dismal Gardens, Space and Rocket Center in Huntsville, AL, and Prairie Grove Glade (a Nature Conservancy cedar glade with several rare and endangered plants). Terry said he had mentioned at the Southeastern Chapter of ESA meeting that they may wish to hold a symposium that year on cedar glades or relic communities in conjunction with these field trips. Terry said he would try to get the North Alabama Coalition of Local Governments (NACOLG) to provide shuttles. Terry also mentioned the premier Robert Trent Jones Golf Course, a part of the renowned RTJ Golf Trail will be open then. Some general discussion continued.

Action Item 15: Terry needs to get letter of invitation from UNA's president sent to Andy if they can host the meeting.

Place-of-Meeting Committee—Kim Marie is rotating off as chair. Andy pointed out that we need to change the basic model for setting up the POM committee. He suggested that we should not be placing the previous year's local arrangements chair on the committee because of all the work they have just recently completed. Kim Marie concurred but pointed out that the POM Committee needs to have at least one member on it who has hosted a meeting in the past, just not necessarily the most recent chair of the Local Arrangement Committee. It was added that making professional help available might make hosting easier and therefore more people might be willing to hold a meeting. Andy added that one of his priorities was to try to get three meeting sites this year. Kim Marie gave an example using the Southeastern Deer Study Group where they have a published rotation set up so that one year the meeting is in Tennessee, the next year it will be in Alabama, the next in Georgia, *etc.*, so that years ahead, members know in which states the meetings are to be held. Furthermore, she pointed out that it is the collective responsibility of all members in the respective host states to see to it that the year the meeting is to be in their state that all arrangements have been made. Andy said that is open to investigation, but mainly we need to take a hard look at how we do business especially as it applies to the annual meeting. General discussion followed. Andy suggested we simply staff this committee like we staff all other committees with the general provision that at least one member of the committee has had experience hosting a meeting. Andy asked Kim Marie to come up with a specific procedure for staffing the POM Committee.

Action Item 16: Kim Marie will come up with specific guidelines for staffing the Place-of-Meeting Committee

Student and Senior Research Awards Committees—Terry made a general comment that he may be able to take over plaques for awards. Ken mentioned he may be able to take care of plaques as well. Terry also mentioned that it is time for the EC to step up and do something about ASB award recipients not being present at the banquet to receive their awards. Terry pointed out that the subtle approach of talking to winners ahead of time and even providing them with banquet tickets has not worked. He suggested that we not give the cash award to winners absent from the banquet. A lot of discussion ensued.

Motion 1: Mike Dennis moved that appropriate wording be developed by the President and Secretary for the ASB Meritorious Teaching, Poster, Student Research, Student and Senior Research Awards announcements to include a requirement that the recipient of the award must be present at the Annual ASB Banquet to receive the award and that this wording be sent this wording to the Print Editor for publication. Tom Wentworth seconded the motion. Discussion of the motion followed. Kim Marie Tolson called the question. The motion passed.

Action Item 17: Andy asked Terry to write this up and send it to him for comments.

Adjournment—11:18 AM.

Respectfully Submitted

Terry D. Richardson, Secretary

CONSTITUTION OF THE ASSOCIATION OF SOUTHEASTERN BIOLOGISTS

Article I - Organization

- Section 1. The name of this organization shall be The Association of Southeastern Biologists.
- Section 2. The purpose of this Association shall be to promote the advancement of Biology as a science by encouraging research, the imparting of knowledge, the application of knowledge to the solution of biological problems, and the preservation of biological resources.

Article II - Membership and Dues

- Section 1. Membership shall be open to all persons interested in the biological sciences.
- Section 2. Membership shall be granted to any eligible individual, institution, or corporation upon receipt of a written application and dues payment for the current year.
- Section 3. Each member shall pay annual dues in accordance with her/his category of membership. Annual dues include a year's subscription to *Southeastern Biology* and/or other publications of the Association.

Article III - Officers

- Section 1. The Officers of the Association shall be the President, Vice President, President-Elect, Past President, Secretary, and Treasurer.
- Section 2. The term of office is 3 years for the Secretary and Treasurer and 1 year for the other offices.

Article IV - Executive Committee

- Section 1. The officers of the Association, six (6) Members-at-Large elected by the membership, the Print Editor of *Southeastern Biology*, the Membership Officer, the Web Editor of ASB, and the Archivist of the Association shall constitute the Executive Committee. The Print and Web Editors, Membership Officer, and Archivist shall be ex officio, nonvoting members with the right to discuss all issues and to propose motions. Members-at-Large shall serve terms of 3 years with two members elected each year.
- Section 2. The Executive Committee shall meet in the fall of each year and in the spring during the Annual Meeting of the membership.

Article V - Annual Meeting

- Section 1. The Annual Meeting of the Association shall be held in April at such place as may be recommended by the Executive Committee and approved by the membership. The date of the meeting shall be determined by the Executive Committee.

- Section 2. The Executive Committee may change the time and place of the Annual Meeting and may call special meetings of the Association.
- Section 3. Notice of all special meetings shall be sent to each member at least two (2) weeks before the dates on which such meetings are to convene.
- Section 4. Fifty (50) members of the Association shall constitute a quorum for the transaction of business at the Annual Meeting or at any special meeting.

Article VI - Disposition of Property

In the event of the dissolution or termination of the Association of Southeastern Biologists, title to and possession of all assets of the Association shall be assigned forthwith by the Executive Committee to a non-profit organization similar to the ASB in its overall goals or other biological organizations operated exclusively for charitable, educational, or scientific purposes.

Article VII - Incorporation

The Association of Southeastern Biologists is incorporated as a non-profit scientific, and educational organization without capital stock and one solely engaged in lawful activity as permitted by Section 501(c)(3) of the Internal Revenue Code of 1954, as amended, and by Chapter 55A-86 of the General Statutes of the State of North Carolina. No member shall have any title or interest in the property of the Association, and no dividends or profits shall be declared or paid to any member.

Article VIII - Audit

- Section 1. The fiscal year for the Association is January 1 through December 31.
- Section 2. The financial records of the Treasurer and of the Board of Trustees of the Enrichment Fund shall be audited at least once each year by the Auditing Committee.

Article IX - Archives

The Archives of The Association of Southeastern Biologists shall be maintained permanently at the University of Georgia, Athens, Georgia.

Article X - Amendments

- Section 1. This Constitution may be amended at any Annual Meeting by a three-fourths majority of those present, provided due notice has been sent by the Secretary to the membership at least 30 days in advance of the meeting, provided the amendment has been proposed by the Executive Committee or by a committee authorized by the Association at a previous Annual Meeting, and provided that so long as the Association shall be or remain an organization exempt under Section 501(c)(3) of the Internal Revenue Code of 1954, as amended, no amendment shall be made to Article I, Article VI, or Article VII of this constitution without consent having been obtained from the Internal Revenue Service

and having been reported to the North Carolina Department of State.

- Section 2. Amendments to this constitution shall take effect as soon as adopted by vote of the membership.

BYLAWS OF THE ASSOCIATION OF SOUTHEASTERN BIOLOGISTS

Article I - Membership and Dues

- Section 1. Annual dues shall be set by the membership on recommendation by the Executive Committee for the following categories of regular membership: Individual, Student, Sustaining, Contributing, Family, Life, Emeritus, Patron, and Library.
- Section 2. Any member who has been a regular member of the Association for 10 or more consecutive years and who has retired from professional duties may be elected to Emeritus membership by the Executive Committee. An Emeritus member shall have the same rights and privileges as a Regular Member.
- Section 3. Any individual or organization that contributes funds each year, in an amount set by the Executive Committee and approved by the membership, to sponsor an ASB award or otherwise support the Association shall be known as a Patron Member of the Association.
- Section 4. Any organization with a focus on the biological sciences may become an affiliate of the Association of Southeastern Biologists upon recommendation of the Executive Committee and approval of the membership attending the annual meeting. Affiliation does not confer individual membership in the Association on the members of the affiliated organization.
- Section 5. Annual renewal of membership shall require the payment of dues by the first of January. Any member with dues in arrears on the first of July shall be dropped from the membership roster. Members must pay past dues to maintain continuous membership.

Article II - Election of Officers

- Section 1. The Nominating Committee shall prepare annually a multiple slate of nominees for each office to be filled. Members may recommend to the Nominating Committee persons for any office.
- Section 2. The slate of nominees shall be presented to the membership prior to the Annual Meeting, and the election shall be held during the business session of the Annual Meeting. Nominations will be received from the floor.
- Section 3. The Secretary shall prepare ballots which shall be distributed and collected by three tellers appointed by the President. A majority vote will constitute election to office. Where more than one person is to be elected to a position (e.g., Members-at-Large of the Executive Committee), the two or more receiving the highest number of votes shall be declared elected.

- Section 4. During the Annual Meeting, those elected shall be presented to the membership. All ballots shall be deposited with the Secretary who shall retain them for 1 year.
- Section 5. A President-Elect shall be elected annually and shall become President at the close of the next Annual Meeting.
- Section 6. A Vice President shall be elected annually. Neither the President nor the Vice President shall be eligible for reelection for the year following her/his term of office.
- Section 7. A Secretary and a Treasurer shall each be elected for a 3-year term and shall be eligible for reelection.

Article III - Duties of Officers

- Section 1. The President shall be the executive officer of the Association, shall perform the duties usual to the office, and shall appoint, with the advice of the Executive Committee, regular committees, special committees authorized by the Executive Committee, and where appropriate, Association Representatives to other organizations. The President shall notify Emeritus members of their election.
- Section 2. The President-Elect shall organize the program for the plenary session of the Annual Meeting and shall be responsible for promoting membership in the Association. In the event that the President-Elect cannot complete her/his term of office, the person who received the next highest number of votes shall become President-Elect. If this person is unable to serve, the Executive Committee shall nominate two candidates for the office, one of whom would be elected by the membership by mail ballots.
- Section 3. The Past President, in order to provide continuity in the governance of the Association, shall serve as advisor to the President on matters of past policy. He/She shall serve as Chair of the Resolutions Committee and of the Past Presidents' Council.
- Section 4. The Vice President shall be the public relations officer of the Association. In the absence of the President from any meeting, the Vice President shall discharge the duties of the office, and in the event that the President cannot complete her/his term of office, the Vice President shall become President of the Association.
- Section 5. The Secretary shall keep records of the meetings of the Association and of the Executive Committee, conduct routine business pertaining to the office, prepare and distribute ballots, serve ex officio as Associate Editor of *Southeastern Biology*, and report the activities of the office to the Association at the Annual Meeting. In the absence of the Treasurer, the Secretary shall assume the duty to authorize by signature any financial transactions belonging to the Treasurer's office.
- Section 6. The Treasurer shall receive and disburse all funds of the Association, keep records of dues received and funds expended, serve ex officio as Business Manager of *Southeastern Biology*, and report the activities of the office annually to the membership. He/she is authorized to reimburse the Secretary for expenses

incurred in attending the Annual Meeting and interim meetings of the Executive Committee and may be authorized by the Executive Committee to reimburse other officers for expenses incurred in attending one Executive Committee meeting per year.

Article IV - Southeastern Biology

- Section 1. *Southeastern Biology*, the official publication of the Association, shall be published quarterly or at other regular intervals as may be determined by a vote of the membership upon recommendation by the Executive Committee.
- Section 2. The Print Editor, responsible for editing and publishing *Southeastern Biology*, shall be a member of the Association appointed by the Executive Committee for a term of 3 years. He/She shall be eligible for reappointment for successive 3-year terms.
- Section 3. Upon the recommendation of the Print Editor, the Executive Committee may appoint a Circulation Manager who would assist the Editor in matters related to the distribution of the Bulletin.
- Section 4. *Southeastern Biology* shall be supplied to all members of the Association. Organizations may subscribe to *Southeastern Biology* at a rate set by the Executive Committee not to exceed the rate for contributing members, but such subscriptions will not carry the privileges of membership in the Association.
- Section 5. Major changes in editorial policy proposed by the Editor shall be subject to approval by the Executive Committee.

Article V - ASB Web Page

- Section 1. The Association shall maintain an official ASB Web page on the Internet. The ASB Web page shall contain information about ASB officers and the Executive Committee, information concerning the Annual Meeting, news of ASB activities, information of interest to biologists in the southeast, and links to Internet sites of interest to the membership.
- Section 2. The ASB Web page will be administered by the ASB Web Editor. The Editor of the ASB Web page shall be a member of the Association, responsible for the editing and publishing of the Web page, and shall be selected and appointed by the Executive Committee for a term of 3 years. The Editor shall be eligible for reappointment for any number of successive 3-year terms. The official title shall be Web Editor.

Article VI - Executive Committee

- Section 1. The Executive Committee shall be in charge of the affairs of the Association and shall direct the expenditure of the Association's funds. The committee shall establish the policies for the Association with the approval of the membership and shall record all policies in effect in the "Handbook for Officers and Committee Members."
- Section 2. The Members-at-Large are eligible for reelection. Should a Member-at-Large leave office prior to expiration of the term, the

Executive Committee shall appoint a replacement to serve until the next election.

Section 3. The Executive Committee shall appoint an Archivist who shall be custodian of the permanent records or archives and, with the approval of the Executive Committee, make appropriate arrangements for the collection, care, and maintenance of such records. The Archivist shall serve a term of 3 years and shall be eligible for reappointment for successive 3-year terms.

Section 4. The Executive Committee shall appoint a Membership Officer who shall work closely with the Treasurer and be in charge of all membership-related duties and records including maintaining a membership database. The Membership Officer shall serve a term of 3 years corresponding with the Treasurer's term and shall be eligible for reappointment for successive 3-year terms.

Section 5. For all meetings of the Executive Committee seven voting members shall constitute a quorum.

Article VII - Standing Committees

Section 1. The following standing committees shall serve the Association:

- A. Auditing Committee
- B. Committee on Women, Minorities, and Persons with Disabilities
- C. Conservation Committee
- D. Education Committee
- E. Finance Committee
- F. Graduate Student Support Award Committee
- G. Local Arrangements Committee
- H. Meritorious Teaching Award Committee
- I. Nominating Committee
- J. Past Presidents' Council
- K. Patron Member and Exhibitor Committee
- L. Place of Meeting Committee
- M. Poster Awards Committee
- N. Publications Committee
- O. Resolutions Committee
- P. Senior Research Awards Committee
- Q. Student Research Awards Committee

Section 2. Committee members, except for those who serve ex officio, shall be appointed by the President upon the approval of the Executive Committee. The composition and duties of the standing committees shall be as follows:

- A. The Auditing Committee shall examine the records of the Treasurer prior to the Annual Meeting of the Association and shall report the condition of the accounts to the membership at the business session of this meeting. In accordance with Article VIII, Section 7., the committee shall audit the accounts of the Enrichment Fund. The committee shall consist of three members appointed for terms of 3 years, with a member appointed annually and serving as Chair in the third year.

- B. The Committee on Women, Minorities, and Persons with Disabilities shall promote career opportunities in the biological sciences for women, minorities, and individuals with disabilities and implement programs to eliminate barriers that restrict the access of underrepresented groups to biological careers. The committee shall consist of three members appointed for terms of 3 years, with a member appointed annually and serving as Chair in the third year.
- C. The Conservation Committee shall accumulate facts about environmental issues; shall, where it deems appropriate, disseminate such information to the membership; and shall bring resolutions addressing issues of significance to the Executive Committee for presentation to the membership through the Resolutions Committee. The committee shall consist of three members appointed for terms of 3 years, with a member appointed annually and serving as Chair in the third year.
- D. The Education Committee shall explore ways and means by which the Association might contribute to improved biological education at all levels. Where feasible, the committee shall organize symposia and workshops for the Annual Meeting designed to acquaint the membership with new pedagogy and critical issues in biological education. The committee shall consist of six members appointed for terms of 3 years, with two members appointed annually and serving as Co-Chairs in the third year.
- E. The Finance Committee shall review the finances of the Association, prepare budget projections for future years, and recommend actions regarding dues structure and other financial matters to the Executive Committee. The committee shall consist of the ASB Treasurer (Chair), Past President, President-Elect, and a member of the Executive Committee.
- F. The Graduate Student Support Award Committee shall make monetary awards to assist graduate students to attend the Annual Meetings of ASB. The committee shall consist of three members appointed for terms of 3 years, with a member appointed annually and serving as Chair in the third year.
- G. The Local Arrangements Committee shall make arrangements for the Annual Meeting, including receipt and scheduling of scientific papers to be presented and making arrangements for registration, exhibits, field trips, and social activities. The committee shall also provide information of available transportation, parking, and accommodations. Meeting statistics collected shall be forwarded to the next Local Arrangements Committee. Members of the committee shall include a Chair, selected by the host institution, and the Chairs of subcommittees he or she designates.
- H. The Meritorious Teaching Award Committee may each year select for the award a member of the Association who has taught biology for at least ten years in any college or university

- represented in the Association. The committee shall consist of three members appointed for terms of 3 years, with a member appointed annually and serving as Chair in the third year.
- I. The Nominating Committee shall, with due consideration of suggestions received from the membership, prepare a multiple slate of nominees for each office to be filled. The committee shall consist of three members, one of whom is a recent past president who shall serve as the Chair.
 - J. The Past Presidents' Council, composed of the Past Presidents attending the Annual Meeting with the current Past President serving as Chair, shall review and discuss major issues under consideration by the Executive Committee and, where appropriate, shall share its consensus view with the Executive Committee on the resolution of these issues.
 - K. The Patron Member and Exhibitor Committee shall communicate with patron members and exhibitors, provide Local Arrangements Committees with information and recommendations regarding potential exhibitors, and promote an increase in the number of patron memberships and Annual Meeting exhibitors. The committee shall consist of a Chair (3-year term) appointed by the President with option to reappoint to successive terms, Vice Chair (3-year term) elected by the Executive Committee from its membership at the end of the first year of the Chair's term, the ASB Vice President, and the Past Chair of the Local Arrangements Committee.
 - L. The Place of Meeting Committee shall recommend to the Executive Committee the locations for each Annual Meeting and shall actively seek potential host institutions throughout the southeastern states. The committee shall consist of three members appointed for terms of 3 years, with a member appointed annually and serving as Chair in the third year.
 - M. The Poster Awards Committee may each year select a recipient of the Association Poster Prizes for the meritorious presentation of original research by members at the Annual Meeting. The Committee shall consist of three members appointed for terms of 3 years, with a member appointed annually and serving as Chair in the third year.
 - N. The Publications Committee shall provide oversight of the Association's publications, consider requests for special publication activities, and recommend any alteration of publication policy to the Executive Committee for approval and subsequent approval by the membership. The committee shall consist of three of the Members-at-Large of the Executive Committee and the Editor (ex officio).
 - O. The Resolutions Committee shall formulate and, with approval of the Executive Committee, present to the membership such resolutions as may be considered worthy of action by the Association. The committee shall be served by the Past President as Chair and two additional members with terms of 1 year.

- P. The Senior Research Awards Committee may each year select a recipient of the Association Senior Research Prize for the meritorious presentation of original research by a member (student members excluded) at the Annual Meeting. The committee shall consist of three members appointed for terms of 3 years, with a member appointed annually and serving as Chair in the third year.
- Q. The Student Research Awards Committee may each year select the recipients of the Association Student Research Prizes for the meritorious presentation of original research by a student member at the Annual Meeting. The committee shall consist of three members appointed for terms of 3 years, with a member appointed annually and serving as Chair in the third year.

Article VIII - The Annual Meeting

- Section 1. An Annual Meeting, hosted by colleges, universities, or scientific institutions throughout the Southeast, shall be convened in April for the purposes of conducting Association business; sharing scientific information through symposia, paper and poster sessions, and workshops; and strengthening social and professional ties among Southeastern biologists.
- Section 2. All titles and abstracts of papers and posters submitted for the program shall be in the offices of the Local Arrangements Committee by the date set by the Editor and shall be presented according to the guidelines in the published Call for Papers.
- Section 3. The maximal time period for the presentation of papers shall be established by the Local Arrangements Committee, and the Chairs of the paper sessions will enforce the established time period.
- Section 4. Papers presented at the Annual Meeting shall be read by members or persons introduced by members.

Article IX - The Enrichment Fund

- Section 1. The Association shall maintain an Enrichment Fund to support long- and short-range objectives to advance biological education through teaching and research. The specific objectives to be supported shall be designated by the Executive Committee and approved by the membership.
- Section 2. The Enrichment Fund shall be under joint management of a Board composed of the Executive Committee and Finance Committee and guided by a Chair appointed by the President for a term of 3 years. This Board shall be responsible for the: prudent investment of all Endowment Funds of the Association and for planning and directing the recruitment of funds from the membership and external sources. The Chair shall report the current status of the Enrichment Fund to the Association at the Annual Meeting.
- Section 3. The Board shall receive and administer bequests and other property from any source and shall have the authority to buy, sell,

exchange, lease, transfer, or otherwise dispose of any property, real or personal, with respect to the Enrichment Fund.

Section 4. Bequests and gifts without specific designation (General Fund) shall be designated by the Board for any established educational objective of the Association. Bequests and gifts received for specific purposes shall be either applied directly to the intended purpose (Restricted Funds) or placed in an Endowment with only the annual earnings applied to the intended purpose in accordance with the wishes of the donors. Endowments may be named in honor or memory of individuals or for the intended purpose and may be established for existing educational objectives or others approved by the Board.

Section 5. Income Allocation - The General Fund, Restricted Funds, and Endowments shall be allocated income at the end of the fiscal year based on the average balance of each fund in the total amount of Enrichment Funds invested for that year.

Section 6. Investment Policy - In order to protect the contributions to the Enrichment Fund for their intended objectives, the Board shall strive to invest funds only in conservative investment vehicles offering the highest interest rates or earnings at the time of purchase. Since changes in the economy and other factors greatly affect interest rates and earnings, funds shall be invested up to a period of 5 years unless otherwise approved by the Board.

Section 7. An audit of the Enrichment Fund shall be made at the close of each fiscal year by the Auditing Committee. The committee's report shall be presented to the Association at each Annual Meeting.

Article X - Amendments

Section 1. These bylaws may be amended at any Annual Meeting of the Association by a two-thirds majority vote of those present.

Section 2. Amendments to these bylaws shall take effect at the close of the meeting at which they were adopted.

AMENDMENTS TO THE ASB CONSTITUTION AND BYLAWS

The Executive Committee of ASB has voted to present the following changes to the ASB Constitution and Bylaws to the membership for approval. These changes eliminate the Auditing Committee, any reference to said committee, and all necessary subsequent numeration alphabetical changes required. The Auditing Committee has been dormant for many years except for having an annual external audit performed with the permission of the Executive Committee. These changes require an external audit that will be presented to and signed by the president at each annual meeting. Deletions are marked with ~~strikethrough~~ and additions are in **bold**.

Amendment to the ASB Constitution

Article VIII - Audit

- Section 1. The fiscal year for the Association is January 1 through December 31.
- Section 2. The financial records of the Treasurer and of the Board of Trustees of the Enrichment Fund shall be audited at least once each year by ~~the Auditing Committee~~ **an external auditor and which audit will then be approved and signed by the president at the annual meeting in April.**

AMENDMENTS TO THE ASB BYLAWS

Article III - Duties of Officers

- Section 1. The President shall be the executive officer of the Association, shall perform the duties usual to the office, and shall appoint, with the advice of the Executive Committee, regular committees, special committees authorized by the Executive Committee, and where appropriate, Association Representatives to other organizations. The President shall notify Emeritus members of their election. **The President shall approve and sign the external audit at the annual meeting.**

Article VII - Standing Committees

- Section 1. The following standing committees shall serve the Association:

~~A. Auditing Committee*~~

*and adjust subsequent alphabetical listing accordingly.

- Section 2. Committee members, except for those who serve ex officio, shall be appointed by the President upon the approval of the Executive Committee. The composition and duties of the standing committees shall be as follows:

~~A. The Auditing Committee shall examine the records of the Treasurer prior to the Annual Meeting of the Association and shall report the condition of the accounts to the membership at the business session of this meeting. In accordance with Article VIII, Section 7., the committee shall audit the accounts of the Enrichment Fund. The committee shall consist of three members appointed for terms of 3 years, with a member appointed annually and serving as Chair in the third year.*~~

*and adjust subsequent alphabetical listing accordingly.

Article IX - The Enrichment Fund

- Section 7. An audit of the Enrichment Fund shall be made at the close of each fiscal year by ~~the Auditing Committee~~ **an external auditor and which audit will then be approved and signed by the president at the annual meeting in April.** ~~The committee's report shall be presented to the Association at each Annual Meeting.~~

The *Southeastern Naturalist* . . .

- ◆ A quarterly peer-reviewed and edited interdisciplinary scientific journal with a regional focus on the southeastern United States (ISSN #1528-7092).
- ◆ Featuring research articles, notes, and research summaries on terrestrial, fresh-water, and marine organisms, and their habitats.
- ◆ Focusing on field ecology, biology, behavior, biogeography, taxonomy, evolution, anatomy, physiology, geology, and related fields. Manuscripts on genetics, molecular biology, archaeology, anthropology, etc., are welcome, especially if they provide natural history insights that are of interest to field scientists. Symposium proceedings are occasionally published.
- ◆ Indexed in Biological Abstracts (BIOSIS), BIOSIS Previews, CAB Abstracts, Cambridge Scientific Abstracts, EBSCOhost, Environmental Knowledgebase (formerly Environmental Periodicals Bibliography), FISHLIT (Fish and Fisheries Worldwide; Aquatic Biology, Aquaculture, and Fisheries Resources), Wildlife Review Abstracts, and Zoological Record (BIOSIS UK). Arrangements for indexing in Elsevier BIOBASE (Current Awareness in Biological Sciences), and ISI Services (Science Citation Index-Expanded, ISI Alerting Service, and Current Contents/Agriculture, Biology, and Environmental Sciences) are pending.
- ◆ A sister journal of the *Northeastern Naturalist* (ISSN #1092-6194), published since 1997. Both journals are identical in focus, format, quality, and features. The journals together serve as a matched-pair of regional journals that provide an integrated publishing and research resource for the eastern part of North America.
- ◆ Printed by Allen Press, printer of many journals in the biological and environmental sciences, especially those whose parent organization is a member of the American Institute of Biological Sciences (AIBS).
- ◆ Available online in full-text version in the BioOne database (www.bioone.org, a collaborative effort of Allen Press, AIBS, and other organizations) and the Proquest Information and Learning databases (www.il.proquest.com).

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SYMPOSIUM

FOREST FRAGMENTATION AND BIODIVERSITY IN THE SOUTHEASTERN UNITED STATES

Organizer: SCOTT B. FRANKLIN, University of Memphis

In recent decades, a tremendous amount of field research coupled with technological advances in remote sensing, ecological modeling and GIS have produced a steady stream of information on the patterns and effects of forest fragmentation. Integrating results from such studies into land management plans and decision making, however, is not a trivial task because the effects of fragmentation: 1) are highly specific to the taxa, spatial scales, and ecological processes considered, 2) vary according to landscape type and landscape structure, and 3) may be obscured by local effects such as changes to microhabitat features (e.g., habitat degradation) or historical events. Further, it is becoming apparent that ecological responses to deforestation (the loss of forests) and forest fragmentation (the alteration of forest pattern across the landscape) may be highly nonlinear, i.e., where incremental change in the landscape will have disproportionately large effects on the biota. A contemporary view of the patterns and effects of forest fragmentation (based on current research efforts in the SE) is needed to identify "research horizons" for fragmentation studies in the coming decade.

Fragmentation is directly related to social pressures and subsequent land stewardship, which have varied temporally (historically) and over regions. Most fragmentation research has been done in the Northeast and Northwest (Hunter 1999) and thus our understanding may be region-specific. The south is a distinctive eco-region, however, with a climate of ample precipitation and absence of really cold winters (Subtropical Division, Humid Temperate Domain; Bailey 1998). In addition, the disturbance history of the south is different from other regions (Delcourt 2002). Several relict populations have been left from glacial advances, fire is an important component of several ecosystems, and the low-gradient coastal and bottomland forests are unique to the south. Post-European history also differs from other regions, dominated by plantation agriculture and a lower population density, at least early on, with a late industrialization period. The result is a pattern of fragmentation unlike other parts of the country, which we suggest should be studied on its own.

This symposium was developed to elucidate our current knowledge of changes in ecosystem pattern and function in fragmented landscapes. The symposium began with an overview of fragmentation effects on biodiversity, then the more important case studies on causes and consequences of fragmentation in the southeastern United States. The symposium was supported by a grant from the *National Commission on Science for Sustainable Forestry* to John Kupfer (University of Arizona), George Malanson (University of Iowa) and Scott Franklin.

Biodiversity and Forest Fragmentation

SCOTT B. FRANKLIN (presenter)

Department of Biology, University of Memphis, Memphis, TN 38152

Loss of biodiversity due to forest fragmentation is intuitive based on theories of island biogeography and metapopulations. Fragmentation has a direct effect on diversity due to loss of habitat (animals within fragments that find their ranges downsized), to decreases in fitness (e.g., edge effects), and to decreases in gene pools (i.e., genetic drift). While these direct effects are easy to see, indirect effects of fragmentation on biota may be as critical. Fragmentation may alter natural disturbance regimes and invasion potential of fragments, both strongly related to biodiversity. In addition, microclimate and nutrient cycling may be affected within fragments, and exchanges of nutrients and organic matter between fragment and non-fragment areas may be altered. Metapopulation theory suggests that fragmentation will alter the movement of plants and animals across the landscape based on occurrence of suitable habitat (size and density), further affecting gene flow and population fitness. While studies continue to realize the effects of fragmentation on biodiversity, our understanding of how landscapes function under increased fragmentation is still rudimentary, partially because of the embedded idea of a suitable fragment in a non-suitable matrix in island biogeography and metapopulation theories. Understanding the direct and indirect effects of fragmentation will require abandoning this dichotomous view for a heterogeneous landscape perspective, where varying degrees of suitability for the movement and growth of populations occur throughout the landscape. From a heterogeneous perspective, effects of fragmentation will be different between the regions of the United States, with the southeast region heavily populated and strongly fragmented.

Urbanization and Forest Fragmentation Across the U.S. South

JOHN M. PYE (Presenter)

DAVID N. WEAR

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Efforts to preserve biodiversity in the heavily-forested Southern U.S. should benefit from reliable information on where critical interior forests are found today and where interior forests will be most threatened in the years to come. This study uses empirical cross-sectional analyses to quantify the influence of demographic and socio-economic factors on forest structure, and then predicts those areas where anticipated demographic changes will put interior forests at greatest risk. Analyses are conducted using county-aggregated data from Arkansas and east Texas to Virginia and Florida.

Interior forest in this study is measured using a land-cover map reclassified to forest, non-forest and missing. Each 0.09-ha pixel is classified as interior forest if its 7 ha neighborhood contains no non-forest pixels. Interior forest pixels are then summed to the county level. Independent variables include measures of forest

cover, agricultural returns, soil productivity, road and population densities, housing values, and the presence of highways, all aggregated to the county level. Structuring the regression as a system of three simultaneous equations avoids simultaneity problems in the data. Weighting each observation by county area corrects for heteroscedasticity.

The analyses show that forest area is predicted by population density (-), agricultural value (-) and soil productivity (-), road density is predicted by population density (+), highway presence (+), and housing values (-), and interior forest is predicted by forest area (+), road density (-) and soil productivity (-). Other things being equal, a one percent reduction in forest area is associated with a two percent reduction in interior forest, a one percent increase in road density with a 0.6 percent reduction in interior forest, and a one percent increase in population with a 0.09 percent reduction in forest interior.

Projections of anticipated population changes can be translated by the regression equations into county-level maps of predicted change in road density, forest area, and interior forest, allowing identification of areas at greatest risk to loss of interior forest. Overall, population changes by the year 2020 are projected to result in a two percent loss of forest and a four percent loss of interior forest across the South. These losses will be mostly felt in peninsular Florida, along the Atlantic and central Gulf Coasts, and around most of the already urbanized areas of the South. Governments and conservation organizations can use these forecasts along with other information to prioritize protection efforts across the region. A manuscript describing the study in more detail is in review and is available from the authors.

The Effects of Fragmentation on Spatial Fire Behavior in a Pyrogenic System

BREAN W. DUNCAN (presenter)

PAUL A. SCHMALZER

Dynamac Corporation, Mail Code DYN-2, Kennedy Space Center, FL 32899

Fire is a critical maintenance process for southeastern ecosystems. Anthropogenic factors such as fragmentation of fuels, introduction of exotic species, and suppressing fires have altered fire regimes. Fragmentation of fuels has been shown to be a major contributing factor to the disruption of natural fire regimes, especially fire spread (Turner et al. 1989; Davis and Burrows 1994). Although fire is well studied, few studies directly quantify anthropogenic influences such as fragmentation on modern fire regimes.

We applied historic (1920 and 1943) and current (1990) GIS fuels maps and the FARSITE fire spread model (Finney 1998) to quantify the differences between historic and current fire spread distributions on Kennedy Space Center, Florida. We held all fire modeling variables (wind speed and direction, cloud cover, precipitation, humidity, air temperature, fuel moistures, ignition source and location) constant with exception of the fuel models representing different time periods. The FRAGSTATS software package was used to quantify spatial configuration of fuels on each historic landscape (McGarigal and Marks 1995).

The largest simulated fires occurred in 1920 and fires became smaller for each successive modeling date. Anthropogenic features (industrial facilities, transportation, and agriculture) have increased by 187% in the northern region of KSC, 3,397% in the central region, 1,166% in the southern region, and 2,129% on CCAFS between 1920 and 1990. Linear regression between percent area burned and patch density was significant ($F = 21.05$, $R^2 = 0.678$, $P < 0.001$), indicating a strong relationship between habitat fragmentation and percent area burned. There was a significant negative quadratic regression between percent burned and percent anthropogenic features ($F = 8.1$, $R^2 = 0.643$, $P < 0.01$). The quadratic regression indicated that anthropogenic landcover had a disproportionate effect in reducing fire size on KSC.

This study used empirical historic and current fuel maps combined with spatial fire modeling techniques to perform a change detection of landscape flammability and fire extent from baseline historic conditions. We conclude that flammability of a pyrogenic system in the southeastern United States has decreased through time, largely due to fragmentation of fuels. Further detail on this study can be found in Duncan and Schmalzer (2003).

Beyond the Edge Zone: Fragmentation Effects Unrelated to Microclimate

GLENN R. MATLACK (presenter)

Department of Environmental and Plant Biology, 317 Porter Hall, Ohio University, Athens, Ohio 45701

Although the concept of ecosystem fragmentation was introduced several decades ago, current thinking is strongly influenced by empirical studies done in the 1980s and early 1990s (e.g. Lovejoy et al. 1984, Brothers and Spingarn 1992, Chen et al. 1992, Matlack 1993). Such studies, situated in deciduous forests of eastern North America and lowland evergreen forests of tropical America, drew attention to edge effects – alterations in the forest microenvironment at human-generated stand edges. In those ecosystems, edge effects were most often related to sunlight penetration at the exposed edge and advective movement of warm air under the crown canopy. Although not widely tested outside temperate deciduous forest and tropical rainforest, edge-zone phenomena now dominate models of fragmented forest dynamics.

Edge effects appear to be less important in the native pine forests of the southeastern coastal plain. The naturally open canopy of the fire-maintained savanna admits light throughout, eliminating the clear distinction between fragment interior and exterior. In the surviving longleaf pine (*Pinus palustris*) stands and loblolly pine (*P. taeda*) plantations around Hattiesburg, Mississippi, edge effects on the scale of the northern forests are not evident (GRM pers. obs.). This observation is consistent with the lack of edge effects in similarly open eucalypt forests of southeastern Australia (Beer et al. 2000).

The lack of edge effects notwithstanding, coastal plain forests have experienced extensive fragmentation which has affected forest community structure. Historically, longleaf pine savanna was sharply separated from mixed

bottomland forest including loblolly pine and various hardwoods – a distinction maintained by the intolerance of fire in loblolly and associated species and the low frequency of fires in bottomlands. Separation of bottomland areas by 600-900m (the average distance between small streams) doubtless impeded the spread of pathogens specific to loblolly pine. In the twentieth century, however, widespread fire suppression has allowed loblolly pine to colonize upland areas, a trend greatly facilitated by the widespread planting of loblolly in plantations.

Plantation stands have radically changed the scale and arrangement of loblolly pine forests in the landscape. Plantations are generally rectangular, extending across the landscape irrespective of landform or local environmental quality. Perkins and Matlack (2002) report that plantation stands are now only separated by only 20-50m, well within the dispersal range of pathogens such as fusiform rust and the southern pine beetle. Anecdotal evidence suggests that infestations of southern pine beetle are now more severe than before commercial forestry (although we have not yet found a way to quantify preforestry outbreaks). Fragmentation by plantation forestry has potentially changed the spatial dynamic of pathogen invasions, much as row-crop agriculture has facilitated the spread of host-specific pathogens such as the famous Southern Leaf Blight.

Although human intervention has increased habitat connectivity at the scale of bottomlands and uplands, we have decreased connectivity at a finer scale by imposing a network of roads, railroads, powerlines, and gas pipelines. All such dividers function as effective firebreaks. Although ignition frequency is probably greater than in pre-commercial forests, the spatial scale of fires is much reduced due to constraints on spread. As at Cape Canaveral, the result is that point-frequency of fire in the longleaf pine region is much decreased by historical standards (Williams 1989, Hughes 1999). At low fire frequency, most unmanaged forest on the outer coastal plain of Mississippi is now densely vegetated with fire-intolerant hardwoods, pines, and numerous shrubs.

In summary, the most severe impacts of fragmentation in coastal plain forest seem to involve alteration in the flow of landscape-integrating, spatially extensive processes such as the spread of pathogens or fire. Edge-oriented models are less useful, apparently suited to closed canopy forests with strong canopy microenvironment effects. In the absence of fire a mixed pine/hardwood forest has replaced pine savanna with a dense crown canopy over large areas (Ware et al. 1993) increasing the edge/interior contrast, but vegetational edge effects have not been documented.

Although the local impacts of fire and pathogens are well-documented in pine forests, the biotic response is poorly understood at a landscape level. Disturbance-oriented studies show long-lived species impoverishment in the herb layer (Glasgow and Matlack unpub.) and the soil invertebrate community (Thornton and Matlack 2002) lasting several decades beyond restoration of natural vegetation. Perhaps dispersal of forest herbs and invertebrates should also be considered landscape-level flow processes which may be impeded in the same manner as fire or the spread of pathogens. If this is the case, propagule flow appears to occur on a much longer time scale. Correcting the impact of fragmentation in the longleaf pine savanna may be more difficult than simply restoring fire and closing gaps among stands.

Fragmentation and Exotics

VICTOR A. RUDIS (presenter)

USDA-FS-SRS-FIA, 201 Lincoln Green, Starkville, MS 39759

In forests fragmented by nonforest land, native forest communities may be threatened by the invasion of nonnative invasive species. My study used archived records of selected nonnative invasive plant taxa to document their occurrence relative to forest fragmentation at various scales. The data are from recent forest surveys of the South by the USDA Forest Service, Southern Research Station, Forest Inventory and Analysis (FIA) program. These forest surveys defined forests as ≥ 37 m in width, ≥ 0.4 -ha in size, and not developed for nonforest uses.

Forest interior-weighted sampling from 1989 to 1995 surveys showed Southeast (Florida, Georgia, North Carolina, South Carolina, and Virginia) forests with *Lonicera japonica* on 6.8 million ha (20% of surveyed forests), *Ligustrum* on 1.2 million ha (3.5%), *Rosa multiflora* on 0.3 million ha (0.9%), *Ailanthus altissima* on 0.2 million ha (0.2%), and lesser amounts of *Melaleuca*, *Paulownia*, and *Pueraria montana*. With the exception of *Pueraria*, the odds of occurrence were greater in 182-ha neighborhoods having a majority in nonforest land than forest land. This suggests propagules (a.k.a., terrorist cells) are lurking in nonforest neighborhoods, perhaps in tree-lined fencerows, highway right-of-ways, shrublands, and yards of urban areas. Forests in nonforest-dominated neighborhoods may be particularly vulnerable to invasion due to the likely rain of seeds from nearby nonnative individuals.

In South Central States, forest fragment size associated with bottomland hardwoods was directly associated with some anthropogenic activities, e.g., livestock grazing more common in small fragments, and logging more common in intermediate-sized fragments (Rudis 1995). Hence, isolating forest fragmentation from other likely causes for nonnative species occurrence from regional surveys may be problematic. Nonetheless, resurveys between the 1980s and 1990s revealed changes with associated stand disturbances and net changes by species. Anthropogenic activity such as livestock grazing was associated with a greater occurrence probability of *Ailanthus*, *Rosa*, *Ligustrum*, and *Lonicera*, while prescribed fire and other timber management activities were associated with a lower occurrence probability.

The 1997 survey of Georgia permitted additional characterization of 0.6-ha neighborhoods, which revealed *Pueraria*, *Lonicera*, and *Ligustrum* 2 to 7 times more frequent when edged by nonforest land. This suggests that conditions at the edge provide the access and light needed to grow and propagate selected nonnative species.

Regional differences in both fragmentation and distribution of nonnative taxa exist, with *Melaleuca* in sparsely-forested south Florida, and other species predominating in less densely forested northern portions of the region. Additional studies are underway, with more detailed measurements and a longer list of inventoried nonnative species being monitored. The goal is to assess their impact on forest communities and provide insight into effective approaches for

long-term management. Early results show *Triadica sebifera* (*Sapium sebiferum*)—an important nonnative invasive tree species—occurring throughout the South but predominating in sparsely-forested coastal areas. Nationally, the FIA Program has several studies underway. For more information, see <http://www.msstate.edu/dept/forestry/nnis/FIAInvasive.pdf>.

Do ungulates integrate ecosystem spatial pattern with function in fragmented, multiple-use landscapes?

STEVEN W. SEAGLE (presenter)

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White-tailed deer (*Odocoileus virginianus*) populations have reached overabundance in many areas of the eastern United States. Although the causes of dense deer populations include removal of natural predators and successful conservation efforts over past decades, the most severe problems of overabundance occur in fragmented landscapes that (1) provide "supplemental" food in the form of agricultural crops, (2) contain forest patches for diurnal concealment, and (3) receive low hunting pressure. Consequently, the negative impacts of deer and any future solutions to those impacts revolve around how these three characteristics have uncoupled deer populations from normal habitat carrying capacities. The most studied impact of overabundant deer is suppression of forest regeneration (e.g., Liang and Seagle 2002) and its economic as well as ecological effects. Although long-term suppression of forest regeneration can carry indirect impacts on forest community composition, ecosystem biomass dynamics, etc. (Seagle and Liang 2001), direct impacts on forest ecosystems embedded in fragmented landscapes have not been studied.

I hypothesize that when overabundant deer feed in fertilized agricultural fields then retreat to forest stands during the day for concealment, rumination, and social interactions, there is strong potential for a net transfer of nutrients from agricultural fields into forests through dung and urine deposition. This potential is exacerbated when overabundant deer already overgraze the forest understory and are forced to rely on agricultural crops. To examine the potential magnitude of this landscape-level nutrient flux I focused on nitrogen in a landscape composed of two patch types: forest stands interspersed with a nitrogen-rich crop (e.g., soybeans - *Glycine max*). Basic assumptions of my calculations include (1) deer movement is not impeded spatial patterning of the two patch types, (2) deer feed solely on the crop for a six-month growing period during the year, (3) deer spend equal amounts of time each day in forest and in field, and (4) deer defecate and urinate randomly throughout the day. This latter assumption likely makes my estimates of nitrogen transfer into the forest conservative because defecation and urination are much more likely to occur during forest-related activities (Sawyer et al. 1993). Physiological equations from Hobbs (1996) were used to calculate daily urine and dung nitrogen output by a deer-sized ungulate, and this estimate was scaled to low (25 deer/ha) and very high (100/ha) deer population sizes to bracket the range of possible nitrogen transport values.

Results indicate that under the conditions described deer can transfer 1.27 - 5.09 kg N/ha/yr from crops to forests depending on deer density and with an

extensive portion of landscape (90%) covered by forests (Seagle 2003). For both low and high deer populations, when forest cover in the landscape decreases deer are forced into smaller areas for diurnal concealment, but nitrogen deposition rates remain the same. Consequently, as forest percent cover declines, nitrogen deposition to the forest increases nonlinearly and reaches highs of 11.5 and 45.9 kg/ha/yr for low and high densities, respectively, when only 10% of the landscape is forested (Seagle 2003). To place these deer nitrogen deposition numbers into perspective, in northcentral Maryland (USA) where deer populations are highly problematic, total (wet plus dry plus organic) atmospheric nitrogen deposition is approximately 21 kg/ha/yr and nitrogen return to the forest floor via leaf litter fall is approximately 62 kg/ha/yr. Clearly, deer populations have the potential to introduce biologically significant amounts of nitrogen into fragmented forest ecosystems by selective foraging of crops and preferential use of forest patches for diurnal concealment.

Deer nitrogen transfer from agroecosystems into forests carries a variety of ramifications. First, it must be recognized that nitrogen transported into forests by deer is "new" nitrogen from the point-of-view of forest ecosystem nitrogen budgets. By the calculations presented here, this new nitrogen is minimally about 6% of nitrogen entering forest ecosystems from atmospheric deposition, and maximally about 2.2 times atmospheric deposition. Although the specific amount of new nitrogen deposited in forests by deer remains unknown, the potential for this nitrogen to be a significant addition to the forest nitrogen budget is clear and may need to be considered in debates over issues such as forest nitrogen saturation. Unlike atmospheric deposition, deer nitrogen deposition is likely to be patchy both among and within forest patches because of habitat/microhabitat preferences of the animals. The implications of patchy nitrogen additions for the forest floor are many because the forest floor leaf litter food web is a donor-controlled (bottom-up) system (Chen and Wise 1999). Consequently the nitrogen and carbon deposited to the forest floor may serve as a significant spatial subsidy to this food web, and deposition may influence the spatial patchiness of processes such as food web productivity, interspecific interactions influencing biodiversity, litter decomposition rates, and soil nitrogen dynamics.

In summary, deer impacts on forest ecosystems may extend to direct impacts derived from the patchy composition of multiple-use landscapes and selective use of habitat patches by deer. Current studies are aimed at empirical quantification of deer nitrogen deposition rates, identification of the sources of nitrogen deposited in forests by deer, and the impact of this spatial subsidy on diversity and productivity of the forest floor food web. These studies should provide ecologists new insight to how heterogeneous landscapes influence (and are influenced by!) fluxes of nutrients among patches.

Acknowledgments: Support for studies of deer in multiple-use landscapes was provided by NSF Grant DEB-0234705 to S.W. Seagle. This is Scientific Series No. 3691 of the University of Maryland Center for Environmental Science's Appalachian Laboratory.

Discussion & Summary

While natural processes can cause habitat loss and the fragmentation of landscapes and habitats, human landscape modification is by far the most significant factor resulting in deforestation and fragmentation in southeastern forest ecosystems. To understand the effects of fragmentation on biodiversity and ecosystem processes requires consideration of both the ways in which fragmentation alters spatial configuration and habitat suitability in the remnants and the surrounding matrix as well as the ways in which species respond to these changes (Lindenmayer and Franklin 2002). In response to the need for such insight, three major themes have developed in fragmentation research: 1) pattern and movement of habitat use, 2) ecological processes at habitat edges, and 3) population and community dynamics in heterogeneous landscapes.

Organisms perceive and respond to the environment in different ways and at different spatial and temporal scales. Thus, effects of fragmentation are impossible to generalize across all species; e.g., an agricultural landscape that may be un-crossable for a small rodent may pose no restrictions to the movement of an avian species. Likewise, remnant patches of forest interior may be the only suitable habitat for some animals, but not others. Fragmentation thus results in another selective filter for the distribution of plants and animals. An inventory of the current fragmented landscape, linking factors that increase or decrease fragmentation, and subsequently modeling changes helps elucidate areas of management concern. For example, Pye et al. (above) point out that the greatest loss of interior forest in the southeastern US by 2020 will be along the Atlantic and central Gulf coasts, potentially very detrimental to an already weakened coastal ecosystem.

Historical landscapes and processes are an important baseline for understanding fragmentation effects. Indeed, Glenn Matlack points out that fire-sustained forest of the southeastern US were more fragmented historically. The increased proximity of contemporary forests may be implicated for more widespread pathogen outbreaks. Alternatively, Brean Duncan and Paul Schmalzer provide a good case study on how fragmentation alters the fire disturbance regime. Anthropogenic activities that essentially developed fire breaks have reduced the spread of fire by 40%, thus reducing suitable habitat for fire-maintained taxa. The take-home message from these studies is that landscape heterogeneity is an important structural feature affecting other ecosystem properties.

Understanding the function of the landscape structure on population and community processes is an extremely important first step, a step we currently lack, to understanding effects of fragmentation. Recent work has elucidated the importance of examining not only the remnants of a fragmented landscape, but also the properties of the dominant matrix as well (e.g., Watt 1996). The landscape is not black and white, remnant forest and nonforest, as rooted in metapopulation theory, but instead a heterogeneous landscape of varying suitable habitat and anthropogenic activities. Studies incorporating heterogeneity would substantially increase our current understanding of fragmentation effects.

Edges have long been examined for their relation to animal movement and their alteration to resources, such as light. Again, species perceive edges differently, another selective filter for landscape movement. Further, edges are not easily classified, and the effects of edges are related to how 'hard' an edge is (how different are the two adjacent habitats?) and whether or not the edge provides emergent properties (i.e., properties different from either adjacent habitat) (Lidicker & Peterson 1999). As Glenn Matlack asks, what constitutes an edge in a fire-maintained savanna? Edges have been implicated as corridors for plant dispersal (Kupfer & Runkle 2003), especially opportunistic taxa, but movement across edges and use of edge habitat (including corridors) has been linked to the type of adjacent habitat (Ambrose 1987). Vic Rudis found three invasive exotics (*Pueraria*, *Lonicera*, and *Ligustrum*) were 2 to 7 times more frequent when edged by non-forest land. The complexity of the edge is directly related to the complexity of the landscape as a whole, so viewing the landscape as heterogeneous will allow a view of varying edge 'hardness' as well.

There is little doubt that population and community dynamics are altered by fragmentation, via the effects of edges on plant and animal movement or the effects of fragmentation on habitat suitability (see Matlack and Rudis above). Steven Seagle provides the next step in the alteration of these processes as they affect ecosystem dynamics. His modeled case study suggests white-tailed deer harvest and move substantial amounts of nitrogen from agricultural lands to forest fragments. Indeed, Matlack summarizes from his work that the most severe impacts of fragmentation in coastal plain forest seem to involve alteration in the flow of landscape-integrating, spatially extensive processes such as the spread of a pathogens or fire. Thus, 'flow' (dispersal, movement) is perhaps the most important component for studying fragmentation effects.

In conclusion, more detailed and integrative studies of fragmentation are needed to fully understand effects of fragmentation on biodiversity. The complex issue of species-specificity in their perception of suitable habitat and landscape movement barriers may be partially alleviated by using life history characteristics and dispersal ability to develop functional groups (see Wolff 1999). In addition, abandoning the typical black and white view of a fragmented landscape for a more heterogeneous view of varying suitability and dispersal barriers may help us understand the confounding evidence in the literature on how fragmentation effects populations and community processes. Modeling more complex systems, and understanding the historical baseline of the system, will provide more accurate predictions on the effects of fragmentation to biodiversity.

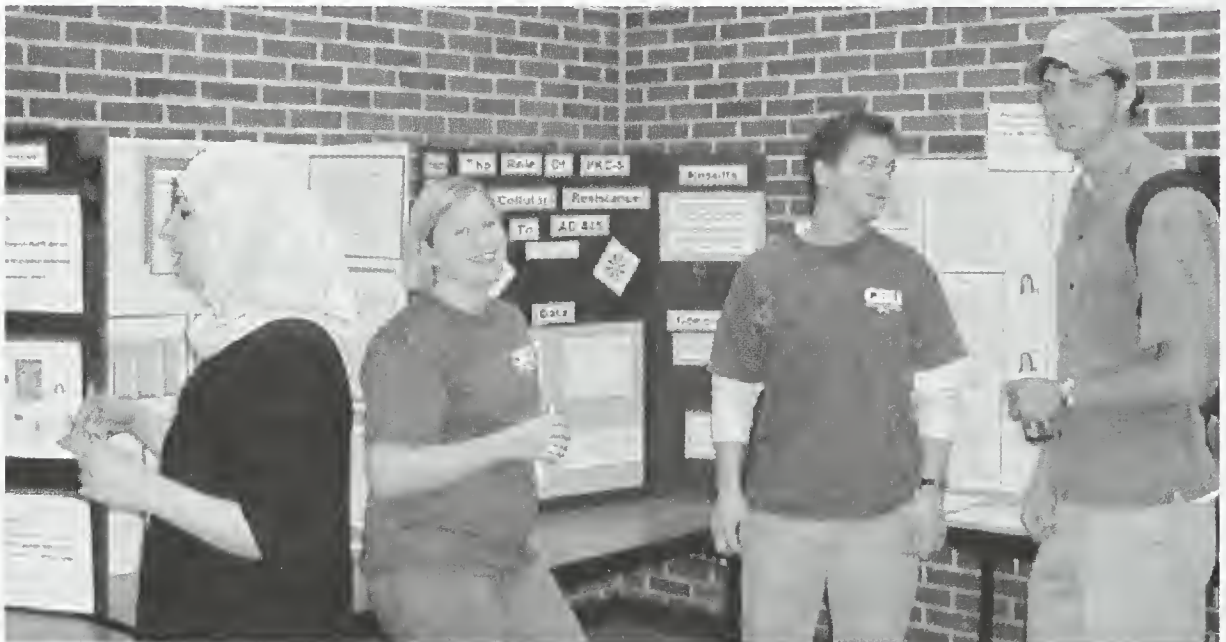
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Suggested citation: Franklin, S.B., Pye, J.M., Duncan, B.W., Matlack, G.R., Rudis, V.A. and Seagle, S.W. 2003. Forest fragmentation and biodiversity in the southeast. *Southeastern Biology* 50: 335-346.



Student research posters at Christian Brothers University.

AWARDS FROM THE AMERICAN SOCIETY OF ICHTHYOLOGISTS AND HERPETOLOGISTS

2004 AWARDS

Robert H. Gibbs, Jr. Memorial Award for Excellence in Systematic Ichthyology

Nominations are solicited for the Robert H. Gibbs, Jr. Memorial Award for Excellence in Systematic Ichthyology from the American Society of Ichthyologists and Herpetologists (ASIH). The prize is awarded for "an outstanding body of published work in systematic ichthyology" to a citizen of a Western Hemisphere nation who has not been a recipient of the award. The award is offered annually and consists of a plaque and a cash award (approximately \$5,000). The award is presented during the banquet held in conjunction with the annual meeting of ASIH. Nominations may be made by any ichthyologist, including self-nominations, and should include the nominee's curriculum vitae, details of the nominee's specific contributions and their impacts on systematic ichthyology. Nomination should be submitted by March 1, 2004 for the nominee to be eligible for that year's award. Nominations will be effective for three years. Four copies of each nomination should be sent to Chair of the 2004 Gibbs Award Committee or ASIH Secretary.

Committee Chair: Dr. Henry L. Bart, Jr., Tulane University Museum of Natural History, Belle Chasse, LA 70037; tele (504) 394-1771; FAX (504) 394-5045; e-mail: hank@museum.tulane.edu.

ASIH Secretary: Dr. Maureen A. Donnelly, Department of Biological Sciences, Florida International University, 11200 SW 8th St., University Park, Miami, FL, 33199, e-mail: Donnelly@fiu.edu.

Henry S. Fitch Award for Excellence in Herpetology

The Henry S. Fitch Award honors the herpetological spirit of Henry S. Fitch, a distinguished member of the University of Kansas faculty, for his manifold contributions to our understanding of the systematics, ecology, natural history and conservation of amphibians and reptiles. The award is made by the American Society of Ichthyologists and Herpetologists (ASIH) to an individual for long term excellence in the study of amphibian and/or reptile biology, based principally on the quality of the awardee's research, with consideration given to educational and service impacts of the individual's career in the field of herpetology. The award is presented at the banquet held in conjunction with the annual meeting of ASIH and includes a cash prize and a commemorative certificate.

Nominations for the 2004 Fitch Award may be made by any herpetologist, including self nominations, and should include a letter of nomination detailing the nominee's specific contributions and their impact on the field of herpetology, a curriculum vitae and any additional supporting materials. All nominations are effective for three years. Nominations must be received by March 1, 2004 for the

nominee to be eligible for the 2004 award. Four copies of the nomination materials should be sent to the chair of the Fitch Award Committee.

Committee Chair: Dr. David B. Wake, 3101 VLSB, Museum of Vertebrate Zoology, University of California, Berkeley, CA 94720-3160. Please no e-mail or FAX nominations.

Raney Fund Award

The Raney Award is presented annually in honor of Edward C. Raney (1909-1984). Raney was a leader among Ichthyologists. He possessed a broad knowledge of the fishes of the world, and his particular area of expertise was the fishes of the eastern United States. A member of the faculty at Cornell University, Dr. Raney authored over 75 papers dealing with the systematics, behavior, and ecology of fishes. He was an expert on aquatic environmental problems and served on numerous environmental advisory committees. He was a member of over 30 professional societies, and he served as secretary (1948-1951) and president (1955-1956) of ASIH. The students of Ed Raney are among the leaders in ichthyology today in no small part because of his mentorship and enthusiasm in the study of fishes.

Applications are solicited for grants to be awarded from the Raney Fund for Ichthyology. These funds are used to provide support for young ichthyologists for museums or laboratory study, travel, fieldwork, or any other activity that will effectively enhance their professional careers and their contributions to the science of ichthyology.

Applicants must be members of ASIH and should be enrolled for an advanced degree. Applicants who do not meet these basic requirements may be considered for the award under exceptional circumstances if their careers are judged to be in a developmental stage. Individual awards are typically in the \$400-\$1000 range and will be awarded on basis of both merit and need.

Applications for the Raney Award and a letter of recommendation should be mailed (not e-mailed) to:

Committee Chair: Dr. David J. Eisenhour, Department of Biological & Environmental Sciences, Morehead State University, Morehead, KY 40351, email: d.eisenhour@morehead-st.edu.

The original and three copies of each application should consist of no more than two single-spaced, typewritten pages and must include the following:

1. name, address, social security, email address, and telephone numbers of the applicant;
2. institutional affiliation;
3. academic degree being sought and the year of its expected completion, or highest degree and its date of award;
4. name of the applicant's current or most recent major professor;
5. title of the proposed research;
6. a concise description of research objectives and methods;

7. sources of partial support for the research and pending applications for support from other funds;
8. an outline budget; and
9. a short statement of the way in which the award would be used to enhance research;
10. a Literature Cited section should be appended. Budget items should be listed as nearly as possible in order of priority. Applicants should attempt to keep the budget within the amount of available funds. In case the award must be less than the requested budget, the impact of eliminating part or all of any items should be clearly given.

An original plus three copies of a letter of recommendation from the applicant's current major professor are required. The letter should include statements concerning the:

1. competence of the applicant;
 2. significance of the applicant's research; and
 3. desirability of and needed for the fund being requested by the applicant.
- The applicant should request that the letter be sent directly to the Raney Award Committee Chair.

The application and letter of recommendation should reach the Committee chairman no later than 1 March 2004. It is expected that awards will be made by 1 May 2004.

Gaige Fund Award

Gaige Awards are presented annually in honor of Frederick (Dick) and Helen Gaige, both of whom lived during the years 1890-1976. Dick Gaige, an entomologist, was also an avid herpetological collector and was director of the Museum of Zoology at the University of Michigan from 1928-1945. Helen Gaige was a herpetologist with an interest in Neotropical frogs. She served as herpetological editor of *Copeia* from 1930-1937 and as editor in chief from 1937-1950. This unsurpassed editorial service earned Helen the title of Honorary ASIH President for Herpetology in 1946. The Gaiges showed a lively interest colleagues and students and, through their helpfulness to others, were a major influence in biology in the United States and on herpetology in particular.

Applications are solicited for grants to be awarded from the Gaige Fund. These funds are used to provide support to young herpetologists for museum or laboratory study, travel, fieldwork, or any other activity that will effectively enhance their professional careers by contributing to the science of herpetology.

Applicants must be members of ASIH and should be enrolled in an advanced degree program. Individual awards are typically in the range of \$400-1,000, and will be awarded on the basis of both merit and need.

Applications for the Gaige Award and letters of recommendation should be sent to the Gaige Award Chairperson:

Committee Chair: Dr. Robert E. Espinoza, Department of Biology, California State University Northridge, Northridge, CA 91330-8303, email: robert.e.espinoza@csun.edu. The original and three copies of each application should be submitted. The application should consist of no more than two single-spaced, typewritten pages (12 point font, reasonable margins) and must include the following:

1. name, address, social security number, email address, and telephone numbers of the applicant;
2. institutional affiliation;
3. academic degree being sought and the year of its expected completion, or highest degree and its date of award;
4. name of the applicant's current or most recent major professor;
5. names, addresses and telephone numbers of two persons who have agreed to recommend the applicant and proposal (see below);
6. title of the proposed research;
7. a concise description of the proposed investigation including the general research objectives and methods of study (see below);
8. sources and amounts of partial support for the research and pending applications for support and amounts from other sources;
9. a prioritized budget outline not exceeding the range of typical awards; and
10. a short statement of the way in which the award would be used to enhance research. A Literature Cited section should be appended.

In recent years, successful proposals were carefully prepared, well written, and complete with two letters of recommendation. Award-winning proposal had one or more clearly described central questions that were likely to be answered, at least in part, by completing the proposed research. Importantly, proposals that framed their specific questions within a broader biological context were consistently highly ranked.

Two letters of recommendation from persons familiar with the applicant and his or her research must be solicited by the applicant. One of these letters should be from the current major professor. Both letters should be from reputable scientist, preferably herpetologists, and should include statements concerning the following:

1. the competence of the applicant;
2. the significance of the applicant's research;
3. the desirability of and need for the funds being requested by the applicant. The applicant should request that the original and three copies of each letter be sent directly to the Gaige Award Chairperson. Because of limited funds, previous awardees requesting additional funding for the same or a similar project will be given lower priority.

The application and letters of recommendation should be received by the committee chairperson by 1 March 2004. Students will be notified of the status of their application by 1 May 2004.

Stoye Awards

Stoye Awards of the American Society of Ichthyologists and Herpetologists recognize the best student oral presentations in the following categories:

1. **General Ichthyology** includes, but is not limited to, morphological and molecular systematics, techniques in systematics, zoogeography, paleontology and faunal descriptions.
2. **General Herpetology** includes, but is not limited to, morphological and molecular systematics, techniques in systematics, zoogeography, paleontology and faunal descriptions.
3. **Genetics, Development and Morphology (GD&M)** includes, but is not limited to, population genetics, mitochondrial DNA analysis, comparative embryology, heterochrony, descriptive and experimental development, comparative and evolutionary morphology, functional morphology and biomechanics.
4. **Ecology and Ethology (E&E)** includes, but is not limited to, population and community ecology, life history strategies, descriptive and experimental ethology, behavioral ecology, neuroethology and ecomorphology.
5. **Physiology and Physiological Ecology (P&PE)** includes, but is not limited to, comparative and experimental physiology, biochemistry, sensory and behavioral physiology and endocrinology.
6. **Conservation (CONSERV)** includes, but is not limited to, conservation biology, conservation policy, management, and restoration.

Storer Awards

Storer Awards of the American Society of Ichthyologists and Herpetologists recognize the best student poster presentations in two categories:

- 1) Ichthyology
- 2) Herpetology

Eligibility and Judging

To be eligible for either **Stoye** or **Storer Awards**, a student must (1) be the sole author and presenter, (2) be a member of ASIH, (3) indicate a desire to be considered when submitting an abstract (see "Submitting Abstracts") and (4) meet the ASIH criteria for "student": "an individual who at the time the paper is given ... is the equivalent of a full-time student (... an individual who is devoting their major efforts to a formal program of studies) or who has satisfactorily completed a thesis or dissertation defense during the previous 12 months." Stoye

and Storer presentations are judged by the following criteria: introduction; methods; data analysis and interpretation; conclusions - innovation, originality and scientific significance; presentation; and visual aids or graphic design. The rating scale is 0-10 points: excellent (9-10), very good (7-8), good (4-6), fair (2-3), poor (0-1).



University of Memphis students working in the mammalogy laboratory.

SOUTHERN APPALACHIAN FOREST COALITION

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BUSH ADMINISTRATION PUTS OUR PUBLIC LANDS IN INDUSTRY'S HANDS

Roadless Areas at Risk, Public Cut Out of the Process

November 27, 2002 – According to the Forest Service “Our national forests and grasslands are for everyone” but if the National Forest Management Act (NFMA) that the Bush Administration proposed today is approved, the public will no longer have much of a say in how those lands are managed.

“While the Bush Administration is attempting to streamline the management process, they are in turn effectively cutting out those who the land is suppose to be managed for,” said Hugh Irwin, Conservation Planner of Southern Appalachian Forest Coalition.

The revised NFMA regulations weaken environmental and wildlife protections on 155 million acres of national forest land and eliminate specific protections for roadless areas. Under the new regulations forest plans are exempted from environmental impact statements at the discretion of local forests managers and citizen participation is restricted.

The Bush Administration is returning favors to its campaign contributors by giving the oil, timber, and gas industry easy access to our national forests,” said Mark Shelly, Director of Southern Appalachian Forest Coalition. “The revised forest planning regulations are a backhanded way for the Administration to undermine roadless protection that the public has called for again and again.”

“Without environmental protections, our national forests can be used and abused. The timber industry obviously has no problem logging its way through every inch of our forests, but the American people want our last unroaded forests protected,” said Irwin. “In the Southern Appalachians there are **726,600** inventoried roadless acres that are being put at risk by the Bush Administration’s new forest regulations.”

The Roadless Area Conservation Rule, which protects 58.5 million acres of national forest lands from most commercial logging and road-building, was crafted after years of scientific analysis and 600 public hearings. The Forest Service has received more than 2.2 million comments from the American people

nationwide in favor of the rule, including **100,935** in the Southern Appalachian Region.

"The Bush Administration is systematically cutting the public out of the process," said Shelley. "They continue to ignore millions of Americans who have called for roadless protection; the last thing they should do is limit our ability to even comment."

Despite public support and a commitment from Secretary of Agriculture Ann Veneman to provide roadless protection, the Bush Administration has failed to implement the rule. Had the roadless rule been implemented as written, roadless areas would be protected withstanding changes to NFMA regulations.

"It is time for the Administration to stand up to the special interests and listen to the millions of Americans who want their last undeveloped forests protected," said Irwin.

National Forest Management Plans determine which lands are targeted for mineral development, road building, grazing or timber harvests, and which are preserved for wildlife, recreation or wilderness



~ Public Employees for Environmental Responsibility ~
~ Southern Appalachian Forest Coalition ~
~ Southern Environmental Law Center ~

Embargoed for release until Thursday August 28, 2003 (12:01 a.m. EST)

Contact:

Jeff Ruch, PEER Executive Director; (202) 265-7337; www.peer.org

Doug Ruley, SELC Attorney; (828) 285-9125; www.SouthernEnvironment.org

Hugh Irwin, SAFC Ecologist; (828) 252-9223; www.safc.org

**Forest Service secretly targeting
southern mountains for major logging**

Washington D.C. — The U.S. Forest Service has, at the last minute, authorized changes to forest plans allowing potentially significant timber production on five national forests in the Southern Appalachians, according to internal agency documents released today by three environmental groups. The move reverses years of planning and citizen involvement in the South that resulted in a management scheme that would allow logging *only* as a byproduct of managing for other values such as wildlife habitat and recreation.

The revelation comes just a few months after the agency released for public comment its official management plans touting environmental restoration for the roughly 3 million acres of public land in the five forests. Under the secret proposal, the Southern Region of the USFS is allowing individual forests to decide whether to designate areas of those forests specifically and primarily for timber production.

“It is a classic bait-and-switch, telling citizens one thing but planning something entirely different,” said Jeff Ruch, Executive Director of PEER. “This Administration keeps touting ‘healthy forests’ but these plans show what they really mean is ‘healthy tree farms.’”

“This behind-closed-doors decision is irresponsible and illegal,” said SELC attorney Doug Ruley.

In briefing papers stamped “Not Releasable,” the Forest Service regional leadership team decided in early August to allow individual forests to designate lands where the primary emphasis would be “the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees...” This is a dramatic departure from the draft management plans issued by the Forest Service this spring for citizen comment in which logging would only be a byproduct of other management activities.

The secret plan comes on the heels of a “whistleblower” disclosure filed in June by archaeologist Quentin Bass, a 20-year employee of the Cherokee National Forest in Tennessee who charged the agency with illegally suppressing its own ecological records from nearly a century ago. Those records show that the Southern Appalachians were once dominated by relatively stable forest ecosystems, with trees 300 years old and more. In the draft management plans, the agency ignored these findings, which contradict the intensive logging and prescribed burns it intends for the four national forests – the Cherokee (TN), Chattahoochee/Oconee (GA), Jefferson (VA), and Sumter (SC) – and prescribed burns on the Talladega and Bankhead (AL).

PEER, which is representing Bass in the whistleblower disclosure, jointly released the internal papers along with the Southern Appalachian Forest Coalition and the Southern Environmental Law Center.

The Southern Appalachian mountain region is among the most biologically diverse areas in the world outside of the tropics, containing more tree species than in all of Europe and hundreds of native animals from black bear to the cerulean warbler – many of which are rare or endangered. The national forests in the region are among the nation’s highest in terms of recreation use. Over the course of drafting the management plans, the Forest Service has consistently acknowledged that these biological and recreation values were of primary importance, and that unlike many other national forests, timber production would be only a “byproduct” of managing for these other values.

“We have been told for seven years that the guiding principles were environmental restoration. To reverse these principles at the end of the planning

process outside of the public view is a betrayal of the public trust," said Hugh Irwin of SAFC.

Irwin noted that the agency's stated goals for these management plans were watershed health, recreation, ecosystem sustainability, wildlife habitat, recovery of threatened and endangered species, old-growth forests, and remote recreation opportunities.

SELC attorney Ruley said the Forest Service's 11th-hour change violates the National Environmental Policy Act, which requires a thorough environmental review and full public involvement before making changes of this magnitude. "The Forest Service has to tell the public what the environmental impacts of this change would be and allow citizens to have their say," said Ruley.

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View the whistleblower disclosure of Cherokee NF archaeologist Quentin Bass at www.safc.org



Rhodes College students working on electron microscope.

ALL TAXA BIODIVERSITY INVENTORY (ATBI) GATLINBURG, TENNESSEE

More information about the ATBI and Discovery Life in America (DLIA) may be obtained from the Administrative Officer, Jeanie Hilten, by e-mail jeanie@discoverlife.org. The website is <http://www.discoverlife.org>, and the mailing address is 1314 Cherokee Orchard Road, Gatlinburg, TN 37738.

The following three articles were reprinted with permission from the Vol. 4, No. 1, Winter Newsletter, 2003 issue of the "ATBI Quarterly."

Five, Six, Pick Up Sticks: Hunting for Pyrenomycetes with Larissa Vasilyeva

Nancy Lowe, DLIA Volunteer

When volunteering to help ATBI scientists in the field, I never know what I'm getting myself into. I slog through stagnant ponds searching for leeches, lug heavy batteries up a mountainside in pitch black darkness, coax salamanders into a Ziploc bag, it is good to come to the Smokies prepared for a surprise. What surprised me most about working with Larissa Vasilyeva was that her field work seemed like just a walk in the woods. Poking along with a plastic grocery bag over one arm, picking up sticks, peering over her glasses to look at tiny fruiting bodies of fungi, she seemed more like someone examining produce at a street market. But appearances can be deceiving - Vasilyeva is a world authority on Ascomycetes.

Vasilyeva came to this country from the Institute of Biology & Soil Science, Far East Branch of the Russian Academy of Sciences, Vladivostok, as a result of a NATO grant. She brought her microscopes, a small library of books and her computer, but she did not bring a drivers' license, and in fact does not drive. So I was asked to be her chauffeur for a few days. Not a bad gig, considering I got to spend three days up at Purchase Knob and walk in the woods right at the peak of the Silverbells¹ bloom.

Silverbells seemed unusual to Vasilyeva, as the genus does not exist in eastern Russia, whereas many of our botanical species are closely related to species in her part of the world. The Smokies are located within a fragment of ancient Tertiary flora, another fragment of which is in east Asia. Since many of our plants are morphologically similar to plants in the east Asian flora, it would follow that the fungi which live in their tissues might be closely related as well. Vasilyeva is eager to study this pattern of distribution, comparing species of fungi collected in the eastern U.S. with species collected in eastern Russia.

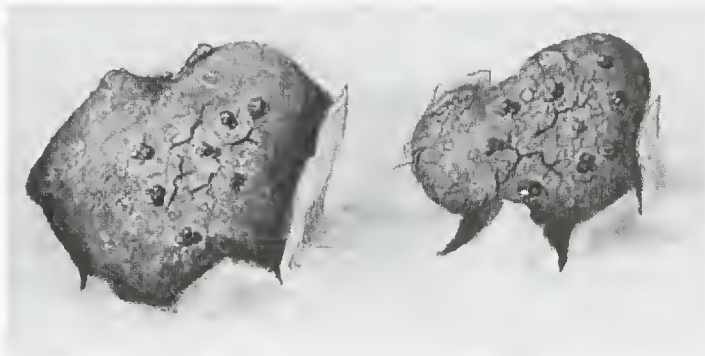
The Pyrenomycetous fungi which Vasilyeva studies occur on leaves, stems, branches and trunks of vascular plants. Most decompose dead tissues, but some

cause disease in living plants. Our infamous chestnut blight is one such disease-causing Pyrenomycete.

The flask-shaped fungi, or Pyrenomycetes, are members of the subdivision Ascomycotina, which is the largest subdivision of the true fungi. The Ascomycetes are a diverse group which includes some charismatic members like the tasty morels and truffles and the colorful cup-fungi, but also humble powdery mildews and bread molds. Ascomycetes all share the microscopic characteristic of bearing their spores inside sacs called asci.

In the more showy cup-fungi, elfin saddles and morels, these asci line an outer surface of the fruiting body, but in the Pyrenomycetes which Vasilyeva studies, the asci line the inner surface of flask-shaped “nests” called perithecia. The perithecia are usually embedded in the fruiting body, but their necks or mouths are visible to the naked eye, protruding like little pimples. The fruiting bodies themselves are often little more than brown or black bumps on a stick (see illustration). Most of the pimply-bumps-on-sticks I eagerly produced turned out to be nothing more than insect frass, or were fruiting bodies past their prime, or were species too common to collect.

Over a period of several weeks, Vasilyeva collected bumpy sticks at many locations throughout the park, finding many species of Pyrenomycetes new to the region, new to North America, and even some new to science. We were fortunate to have Vasilyeva's expert attention directed toward the Smokies and look forward to the publications of her findings here.



Fruiting bodies of *Diatrype virescens* erupting from a beech twig found at Cosby Creek (actual size about 1 mm). Illustration by Nancy Lowe.

Larissa Vasilyeva wishes to thank Jeanie Hilten, Mary McCord, Nancy Headlee, Jim and Betsy Froyd, Bob and Nora White, and all the park staff and volunteers who helped with her efforts.



An Introduction To The Smoky Mountain Mayflies (Insecta: Ephemeroptera)

Luke M. Jacobus and W. P. McCafferty
Department of Entomology, Purdue University
West Lafayette, Indiana 47907

Mayflies are an ancient order of aquatic insects that have fascinated man through the ages. In today's world, they are of premier ecological, recreational, and environmental importance, and this is no less the case in Great Smoky Mountains National Park (GSMNP). These delicate insects are an integral part of

freshwater foodwebs: they process detritus and diatoms and themselves form a significant portion of the diet of animals of all kinds. It is with good reason that flyfishers entice fish with flies patterned after mayflies, both winged and aquatic stages. The analysis of mayfly diversity has become part of environmental assessment protocols, because the diversity and kinds of larvae (or nymphs) found in an area reflect water quality. Therefore, it is clear that an



accounting of GSMNP mayflies will have benefits beyond contributing to the comprehensive inventory effort in the Park. (At right: Adult female *Callibaetis* sp. (Ephemeroptera: Baetidae. Adult mayfly characteristics give the order its scientific name, Ephemeroptera, because they are so fragile and short-lived, or ephemeral. Photo by Luke Jacobus.)

Life History

The diverse forms of mayfly larvae reflect the many niches filled by mayflies in flowing and still water habitats. Larvae molt several times as they grow, and when they reach maturity, they “hatch” from the water as flying subimagos. The subimago (or dun to flyfishers) is a life stage unique among all modern insects, being fully winged but not reproductively mature. Most species hatch at the water surface and fly to a nearby perch, such as streamside vegetation. The subimago differs in part from the true adult stage (or spinner to flyfishers) by having dusky, rather than transparent, wings with microscopic fringes of cilia, which are absent in the adults. In 24 hours or more, the subimago molts to the adult, the reproductive stage. Adult mayflies give the order its scientific name, Ephemeroptera, because they are so fragile and short-lived, or ephemeral. Adults may live from a few hours to a few days, depending on the species. Male adults form nuptial swarms that attract females for mating, and gravid females lay their abundant eggs on or in the water.

Collecting & Rearing

After collection from the water, we suggest that larvae be placed into 90% ethanol for fixing and later transferred to 70% ethanol for storage. Winged stages are most commonly found at lights at night or swarming at various times of the day. Subimagos, which are often impossible to identify to species, usually will molt to the more readily identified adult if gently placed in a small, dry chamber. Adults may be placed directly into 70% ethanol. Many GSMNP mayfly species are known only from a single life stage, and association of adult and larva by rearing is a high priority.

An Invitation

We encourage other biologists and volunteers to collect and study mayflies from the Park. We will be happy to examine specimens sent to us. LMJ <luke_jacobus@entm.purdue.edu> may be contacted regarding collecting mayflies or submitting samples. For details on mayflies, habitats, and collecting information supplementing that given here, we suggest the book, “Aquatic

Entomology," by W. P. McCafferty (Jones and Bartlett Publishers). We look forward to communicating our findings in future issues of ATBI Quarterly.

Visit MAYFLY CENTRAL on the World Wide Web: <<http://www.entm.purdue.edu/entomology/research/mayfly/mayfly.html>>.



CHARISMATIC TRIPLET FLOWERS

Susan Farmer
Department of Botany
University of Tennessee, Knoxville

Trilliums, members of the Trilliaceae, are an attractive and distinctive component of the spring flora of north temperate mixed forests, and are among plants that visitors specifically come to see in the spring. With a distribution across North America and eastern Asia, the center of highest diversity is in the southern Appalachian Mountains. There are 5 or possibly 6 species and 4 named hybrids of *Trillium* in Asia, 8 species in western North America and 30 in eastern North America. While Tennessee has 17 species and North Carolina has 15 species, only 10 are reported from GRSM with a possibility of an 11th.



Trilliums are reported from all counties in the park. An identification chart to species found in the park can be seen at <http://www.goldsword.com/sfarmer/Trillium/Keys/atbi.html>. These trilliums can be divided into 3 groups: the sessile-flowered species, the erectum group of pedicellate trilliums, and the non-erectum group.

The sessile flowered species are the familiar yellow *Trillium luteum* and the brownish-maroon *Trillium cuneatum*. These plants are characterized by spotted leaves; a lack of a stem or pedicel between the leaves and the flower; and a flower with narrow, vertical petals.

The erectum group is complex. These species can be difficult to separate from one another; all have coarse, typically maroon or white petals that turn brown as they age. These species are *Trillium erectum*, *T. flexipes*, *T. rugelii*, *T. simile*, and *T. vaseyi*. *Trillium erectum* can be either red or white, *T. vaseyi* is typically a deep maroon, and the others are all white; in addition, *T. vaseyi* and *T. rugelii* have nodding flowers. The presence of *Trillium flexipes* with its pale ovary needs to be verified in the park; there is a herbarium specimen, but the site needs to be rechecked. *Trillium sulcatum*, similar to *Trillium erectum*, is not known from the park.

The other pedicellate Trilliums include the familiar painted trillium, *Trillium undulatum*, the great white trillium, *Trillium grandiflorum*, and the nodding *Trillium*

catesbaei. The petals of both *T. grandiflorum* and *T. catesbaei* turn a vibrant pink as they age; frequently the flower of *T. catesbaei* opens pink giving the appearance of a hot-pink miniature Turk's cap lily. *Trillium undulatum* is closely related to the Himalayan endemic *Trillidium govanianum*.

It is possible that the dwarf trillium, *Trillium pusillum* is also found in the park. This species is quite small (3-5" tall), and an early flowering (March) plant. There is a herbarium record from the late 19th century of *T. pusillum* from Haywood County, NC. In addition, there is a population in the Nantahala Gorge in Clay County, NC. If present in the park, these plants will probably be found in April and May in wet flood plains, swamps or fens; but other varieties are found on rocky mountain slopes.

Quite a few trails in the Park were surveyed for the ATBI by Discover Life in America (DLIA) volunteers. GPS information and data were gathered and entered into the Park's mapping system.

Knowledge about trilliums is still far from complete. Continuing work in the Smokies will involve examination of pollinators, the relationships with soil types (some prefer a more alkaline soil), and distribution mapping. In addition, it is hoped that the relationship between the Appalachian endemic *Trillium undulatum* and they Himalayan endemic *Trillidium govanianum* can be better understood.

If you're interested, look for trilliums during the Spring Wildflower Pilgrimage in the Park.



Photos: Top is *Trillium simile*, above left is *Trillium luteum* and above right is *Trillium grandiflorum*. All photos by Susan Farmer.



The following article was reprinted with permission from the Vol. 4, No. 2, 2003 Spring Issue of the "ATBI Quarterly."

DLIA Grant Program Awards \$50,000 to ATBI Researchers

Jeanie Hilten, DLIA

Grant money supplied by the Great Smoky Mountains Association and Friends of Great Smoky Mountains National Park is supporting All Taxa Biodiversity Inventory research in the Park for the 2003 season. Dr. John Morse, Discover Life in America Board member and Science Committee Co-Chair, assisted by Tammy Morton, administered the ATBI grant program. The review panel included scientist members of the DLIA Board. Twenty-nine proposals were submitted for a total of \$114,027.40 requested for the \$50,000 budgeted for this year. The granted proposals' executive summaries will soon be on the Discover Life web site: www.discoverlifeinamerica.org.

Fifteen proposals were funded for a total of \$49,934.00. The research will delve into a variety of life forms in Great Smoky Mountains National Park, from aphids to myxomycetes. Again, some of the projects involve young people, volunteers, and teachers participating in scientific research in the Park. Several studies include examining little known habitats and threatened plant communities. Some of the proposals build upon previous and ongoing work. All are coordinated with the Discover Life in America Science Plan.

Recipients of the grants will present a written and oral report of results to date at the 3-5 December 2003 annual meeting of the ATBI, with a final report by 1 May 2004. Information will be submitted to the new ATBI database. DLIA hopes to obtain additional sources of financial support in order to encourage the tremendous amount of research needed to complete the ATBI. Individuals and organizations interested in assisting with the funding of future ATBI research please contact Emily Jones at Friends of Great Smoky Mountains National Park, 865-453-2428.

Congratulations to these scientists for their selection:

Richard Baird, Mississippi State University: Microfungi of the American Beech and Fraser Fir Forests in GSMNP

Paul Bartels, Warren Wilson College: Tardigrade Inventory, 2003-2004

Charles Bartlett, University of Delaware: Planthopper and Leafhopper Diversity of GSMNP

Victoria Bayless, Louisiana State University: Beetle Blitz, 2003—Intensive Sampling and Identification of Coleoptera in GSMNP

Christopher Carlton, Louisiana State University: The Beetle TWIG Year 3: Identifying the Catch

Edward DeWalt, Illinois Natural History Survey: Summer Adult EPT Assemblage of Southwestern GSMNP Drainages

Colin Favret, David J. Voegtlin, and Loy R. Phillippe, Illinois Natural History Survey: Survey of the Aphids of Great Smoky Mountains National Park

Mary Ann Feist, Loy R. Phillippe, and Dan Busemeyer, Illinois Natural History Survey: Searching for New Park Records of Vascular Plants and Lichens in GSMNP

Sean O'Connell, Western Carolina University: Bacterial Bio-Blitz in Twelve ATBI Plots, GSMNP

Michelle Prysby, Great Smoky Mountains Institute at Tremont: ATBI Teacher Assistant for Citizen Science

Michael Pogue, Smithsonian Institution: Noctuidae of Great Smoky Mountains National Park

Gary Steckle and Bruce Sutton, Florida Dept. of Agriculture and Consumer Services: Tephritid Flies of Great Smoky Mountains National Park

Steven Stephenson, Fairmont State College: Biodiversity Studies of Myxomycetes

Tor Tonsberg, University of Bergen, Norway: Discovery of Lichens in Great Smoky Mountains National Park

Mark Wetzel, Illinois Natural History Survey: Continuing Inventory of Freshwater Oligochaeta at Selected Sites in GSMNP



Christian Brothers University students working in the organic chemistry lab.

REVIEW

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Dunlap, J. C., J. J. Loros, and P. J. DeCoursey (eds.). 2004. **Chronobiology: Biological Timekeeping**. Sinauer Associates, Inc., Sunderland, MA. 406 pp. \$74.95

The book "*Chronobiology: Biological Timekeeping*", edited by Jay C. Dunlap, Jennifer J. Loros, and Patricia J. DeCoursey is comprised of 11 chapters written by 18 different contributors. This attractive 8 ½ x 11-inch hardback is 406 pages in length and features 4 color plates. The text is complemented with numerous illustrations, figures, and tables and the index is sufficiently detailed. Each chapter begins with an informative overview to orient the reader within the broader context of the book. The book begins in Chapter 1 with an overview of biological timing and then, in Chapter 2, covers the ecological and evolutionary significance of biological timekeeping. That chapter explains how an organism's fitness is increased if they can anticipate rhythmic events in the absence of a rhythmic environmental cue. In Chapter 3, the fundamental properties of circadian rhythms are discussed, especially entrainment, or the ability of organisms to adjust their biological pacemakers to environmental stimuli (e.g., day-night cycles). Chapter 4 covers circannual rhythms, with photoperiod being the most commonly employed environmental cue. The functional organization of multi-cellular animals is the topic in Chapter 5, followed by a look at the cause and effect of circadian rhythms at the cellular (Chapter 6), molecular (Chapter 7), and genetic (Chapter 8) levels. Humans are the subject of Chapter 9, and the presence, mechanisms, and factors affecting circadian rhythms are discussed. The daily light-dark cycle is the primary entraining agents for humans, and the most widely studied circadian rhythms in humans are the body temperature rhythms and the sleep-wake cycle. These principles are then extended to an intriguing discussion on circadian rhythms and human welfare in Chapter 10. Finally, Chapter 11 forecasts future avenues for study, principally sleep research, and the possible consequences of the degradation of photic entraining signals through, for example, light pollution.

Editorially, I found the writing styles to be a little inconsistent among chapters, which is understandable given the varied contributors to the book; however, that inconsistency was not a serious drawback to understanding the material. The writing is excellent overall, but clichés were perhaps too numerous in Chapter 1 (e.g., "... hoisted into place by mere mortals.", pg. 5; "... the winds of change would blow.", pg. 11) and, later, in Chapter 11 (e.g., "never-ending march of time", pg. 360). Other sentences were confusing: "DeMairan suggested other experiments for which he had no time" (pg. 10). Citations are provided only following subheadings; thus, it is difficult to pair specific statements within the body of the text to the proper reference. Also, the authors of each chapter are acknowledged only at the end of the respective chapter and there is no biographical information on chapter contributors. I would like to have known more about the authors of the individual chapters. Scientific names are not always provided and that caused some confusion for me at times (e.g., sparrow hawks, pg. 39). I found a couple of typographical errors (e.g., "these people's world", pg. 5), but nothing major.

Despite these very minor shortcomings, *Chronobiology: Biological Timekeeping* could serve as a foundation for a college course or would be a worthwhile addition to the library of biologists, ecologists, or physiologists interested in circadian rhythms. The text contains a wealth of information on all aspects of the subject, and that information is skillfully presented. This book will be an important contribution to the field of chronobiology.

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On behalf of the entire ASB membership, the ASB Executive Committee would like to welcome our newest Patron Member Thomson-Learning Brooks/Cole. Thomson Learning-Brooks/Cole joined ASB this past April at the Washington, D.C. meeting while displaying their textbooks as an exhibitor. Since joining, Thomson Learning-Brooks/Cole has become very active and a very important part of ASB. For example, starting at the Memphis meeting in 2004, they will be the sole sponsor of what was once called the "ASB Student Research Award in Aquatic Biology" (some may remember this award by its even older name, "The Wildco Student Research Award in Aquatic Biology"). The award will now be called the "Brooks/Cole Student Research Award in Aquatic Biology" and Thomson Learning-Brooks/Cole will provide the \$200.00 cash prize for the award. And that's not all! Also starting with the 2004 meeting, Thomson Learning-Brooks/Cole will be providing honorable mention book prizes for up to three student papers participating in the ASB Student Research Award sponsored by Martin Microscope Company. Each honorable mention will be for \$200 worth of books at retail value. As the award's sponsor, Patron Member Martin Microscope Company generously agreed to raise the cash value of this award to \$1,000.00 and also make available these honorable mention awards for Thomson Learning-Brooks/Cole.

In addition to awards, Thomson Learning-Brooks/Cole will also sponsor a symposium entitled "Microbiology Practitioners and Educators" at the Memphis meeting. Their intention is to unite information from educators and practitioners in current topic areas like bioterrorism, AIDS, Ebola and other diseases, *etc.* They will be flying in representatives from the CDC, and prominent microbiologists from the University of California Davis, Penn State, and elsewhere.

Finally, starting with the 2005 meeting in Florence, AL., Thomson Learning-Brooks/Cole will be sponsoring a new \$500.00 cash award for outstanding research in the areas of Microbiology/Cell Biology/Genetics/Physiology. ASB is underrepresented in these disciplines and Thomson Learning-Brooks/Cole would like to help us increase our membership representation in these areas by sponsoring this award.

We certainly welcome Thomson Learning-Brooks/Cole to ASB, but we would especially like to thank them for becoming such an active and supportive participant. Without our Patron Members, ASB could never achieve its stated purpose of promoting the advancement of biology as a science by encouraging research, the imparting of knowledge, the application of knowledge to the solution of biological problems, and the preservation of biological resources. Thanks Thomson Learning-Brooks/Cole and all of our ASB Patron Members!

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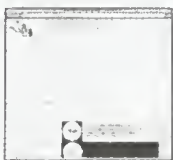


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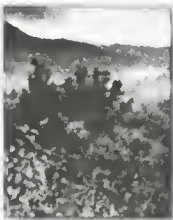
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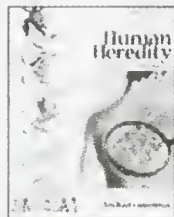
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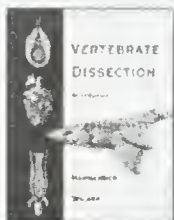
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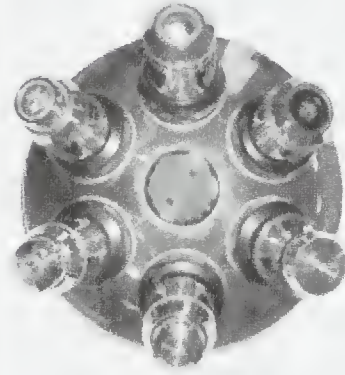
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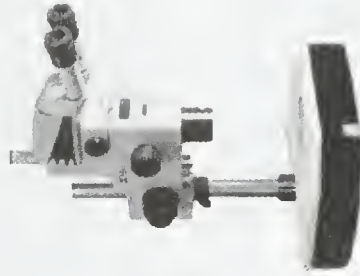


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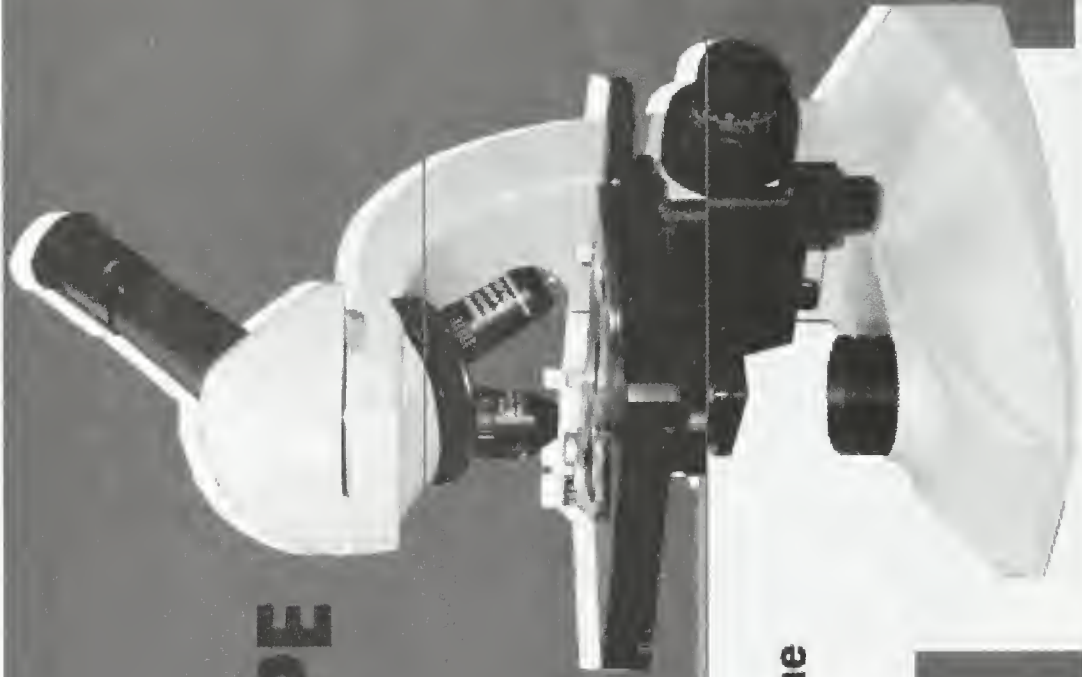
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